Service Manual

74 PMD 201/00E

Portable cassette Recorder

REVISION #2

This service manual was issued in August 1994 and contains the latest Schematic Diagrams, Wiring Diagrams and Parts List.
As for service information other than that included in this service manual, please refer to the Original Service Manual of PMD201 or 74 CP130.

marantz®

model PMD201

4822 725 51066
First issue: 1994/8

PCS 79 367

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound. Only **original MARANTZ parts** can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available at our National Marantz Subsidiary or Agent.

MARANTZ EUROPE B.V.
P.O. Box 80002
Building SFF 2
5600 JB Eindhoven
The Netherlands
Phone : +31-40-732241
Fax : +31-40-735578

ORDERING PARTS

Parts can be ordered either by mail or by telex. In both cases, the correct part number has to be specified.
The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which the part is required
5. Way of shipment
6. Signature: any order form or telex must be signed, otherwise such part order will be considered as null and void.

ADDRESSES

AUSTRALIA
MARANTZ AUSTRALIA
Figtree Drive
Australia Centre
Homebush, NSW 2140
AUSTRALIA

AUSTRIA
MARANTZ
Hietzinger Kai 137a
1130 Wien
Austria

BELGIUM
MARANTZ EUROPE B.V.
Div. Benelux
P.O.Box 80002
Building SFF 2
5600 JB Eindhoven
The Netherlands

CHILE
MARANTZ DIVISION OF
PHILIPS S.A.
Av.Santa Maria 0760
Casilla 2687
Santiago
Chile

DENMARK
MARANTZ
Horsvinget 5
2630 Tastrup
Denmark

FINLAND
MARANTZ
Kuortanegatan 1
00520
Helsingfors 52
Finland

FRANCE
MARANTZ FRANCE
4 Rue Bernard Palissy
92600 Asnières
France

GERMANY
MARANTZ GERMANY GmbH
Kleine Heide 12
Postfach 4802
Halle-Westfalen
Germany

GREAT BRITAIN
MARANTZ HiFi UK Ltd.
Kingsbridge House
Padbury Oaks
575-583 Bath Road
Longford Middlesex UB7 OEH,
U.K.

GREECE
ADAMCO ELECTR. SA
P.O.Box 21025
Hippocratus Str. 188
Athens 11471
Greece

ITALY
MARANTZ ITALIANA SPA
Piazza IV Novembre 3
20124 Milano
Italy

JAPAN
MARANTZ JAPAN INC.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan

KUWAIT
AL ALAMIAH ELECTRONICS
P.O.Box 8196
Salmiah
22052 Kuwait

NETHERLANDS
MARANTZ EUROPE B.V.
Div. Benelux
P.O.Box 80002
Building SFF 2
5600 JB Eindhoven
The Netherlands

NORWAY
MARANTZ
Postboks 7034
Assiden
3007 Drammen
Norway

PORTUGAL
COREL
Av. da Liberdade
211-2 Esq.
1200 Lisboa
Portugal

SAUDI ARABIA
AL ALAMIAH ELECTRONICS
P.O.Box 5954
University Street
Riyadh 11432
Saudi Arabia

SOUTH AFRICA
MARANTZ S.A.
10 Bond Street
Randburg 2194
P.O. Box 7703
Johannesburg 2000
South Africa

SPAIN
MARANTZ SPAIN
Martinez Villergas 2
Apartado 2065
Madrid 28027
Spain

SWEDEN
MARANTZ
Box 1324
17125 Solna
Sweden

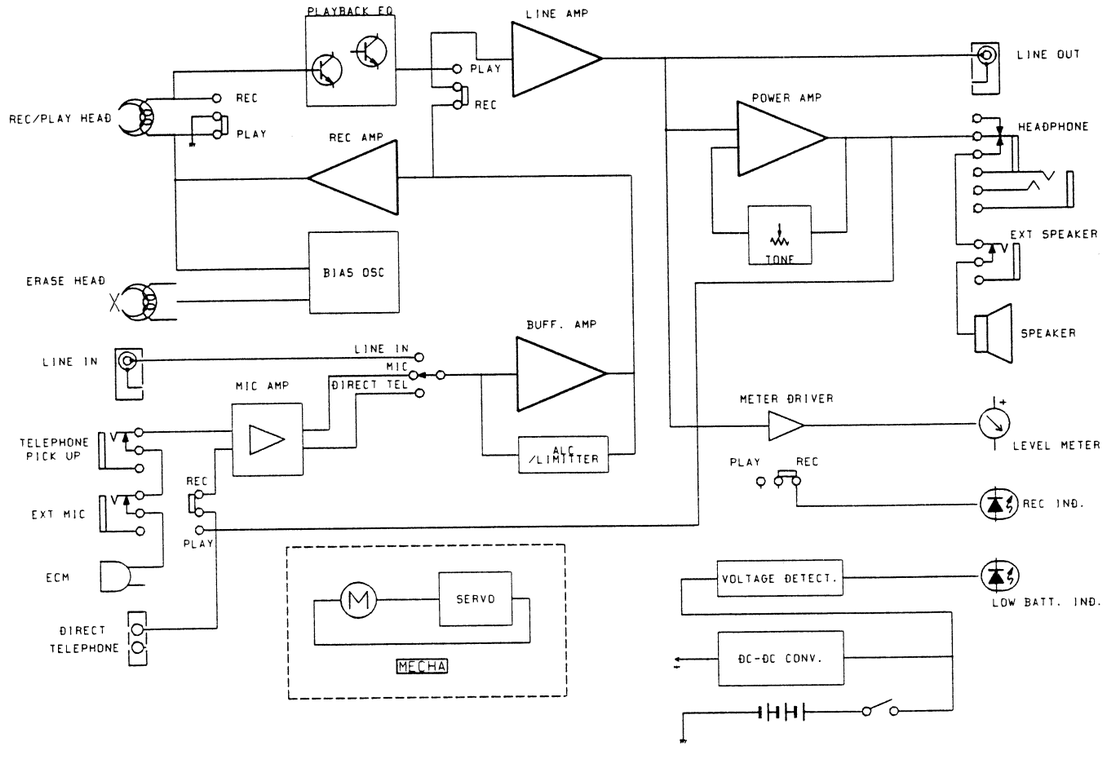
SWITZERLAND
MARANTZ SWITZERLAND
Postfach
8010 Zürich-Müllingen
Switzerland

TRADING
MARANTZ TRADING
P.O.Box 20008
Building SFF 2
5600 JB Eindhoven
The Netherlands

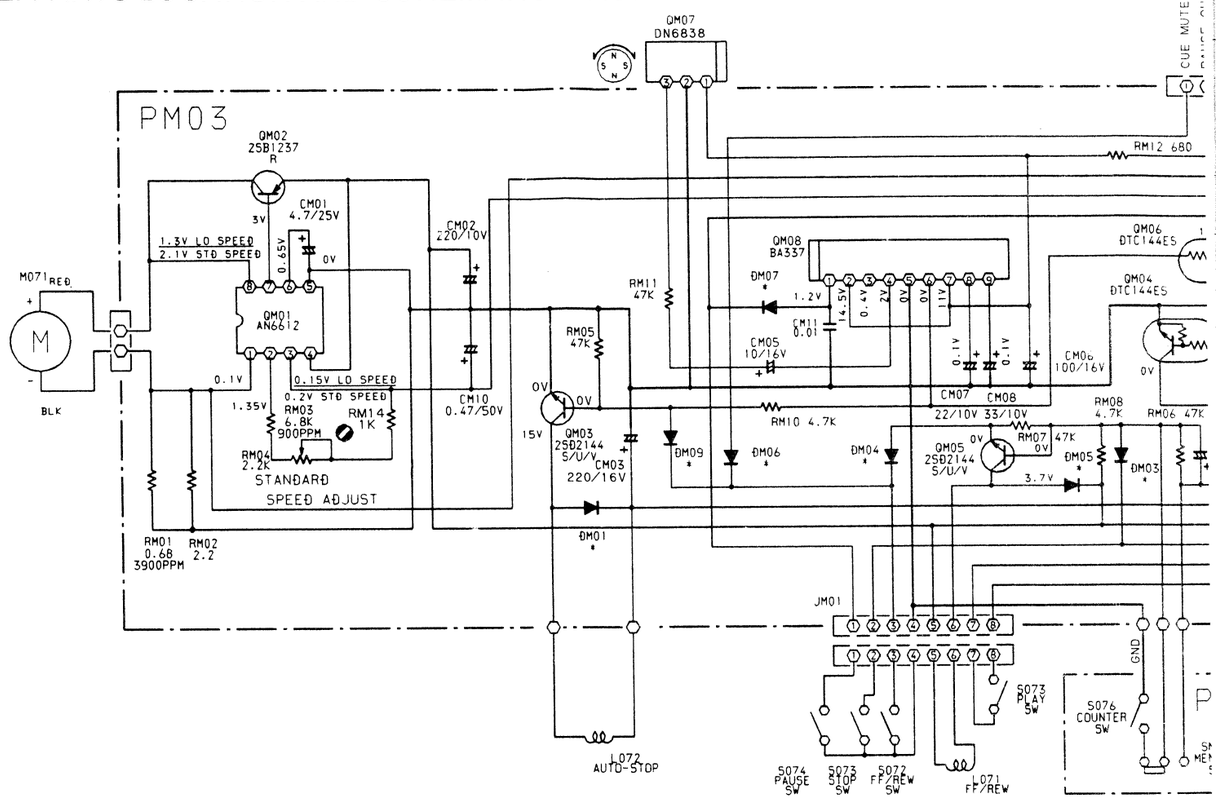
All of the above locations are fully equipped to take care of your total service needs or can advice you. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country.
In the event that there is no service location listed for your country, please contact the nearest facility for the necessary assistance.

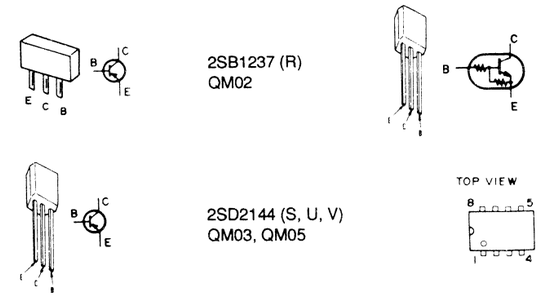
In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

1. BLOCK DIAGRAM

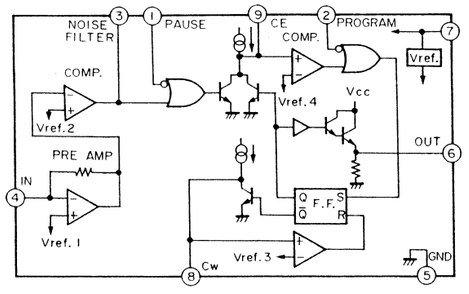


2. PARTS LOCATION AND SCHEMATIC DIAGRAM





QM08: BA337



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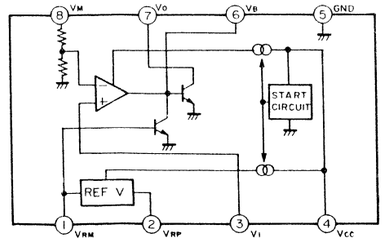
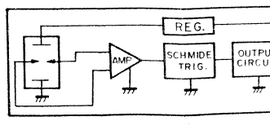


QM07:DN6838



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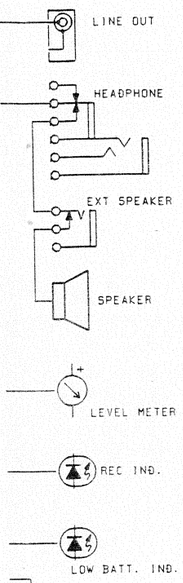
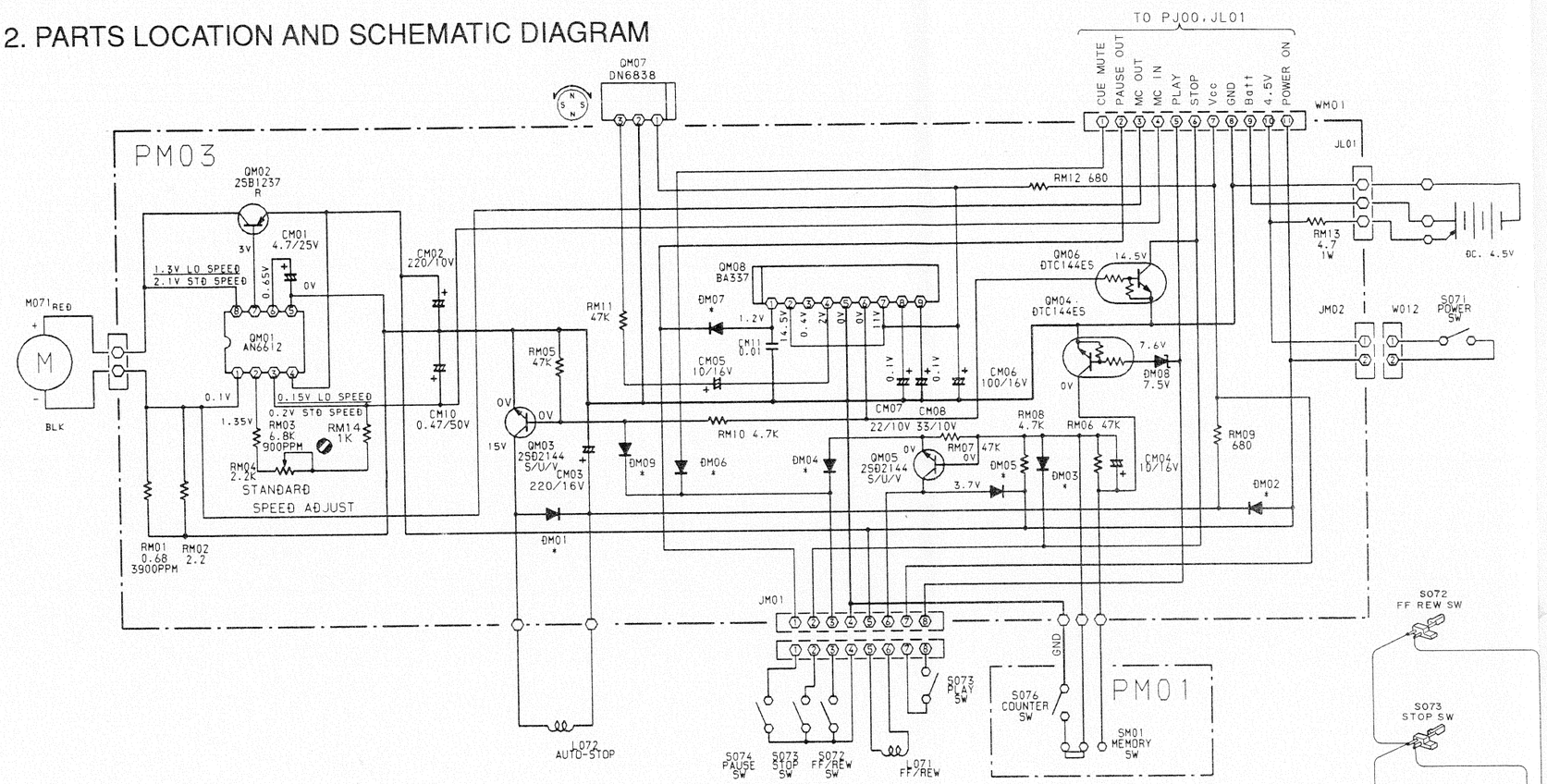


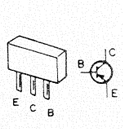


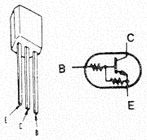
SIGNAL

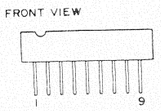
- PLAYBACK
- REC
- PLAYBACK AND REC

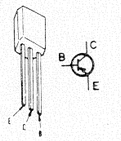
VOLTAGE

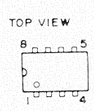
- 3.3V : PLAYBACK OR CONSTANT
- (3.3V) : REC INPUT SELE.=LINE
- ⟪3.3V⟫ : REC INPUT SELE.=MIC
- 3.3V : REC ONLY
- 3.3V : REC STANDARD SPEED
- 3.3V : REC LOW SPEED
- 3.3V : STANDAED SPEED
- ⟨3.3V⟩: LOW SPEED

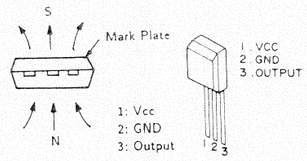












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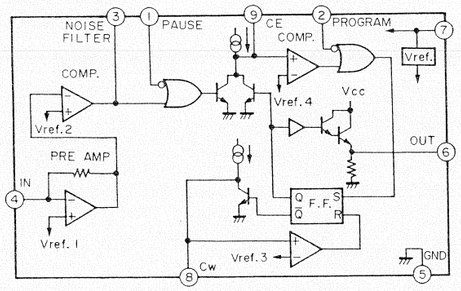

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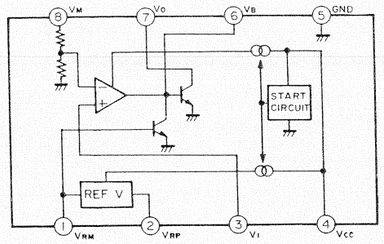

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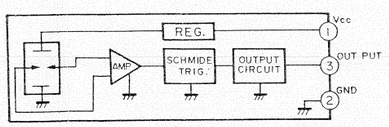
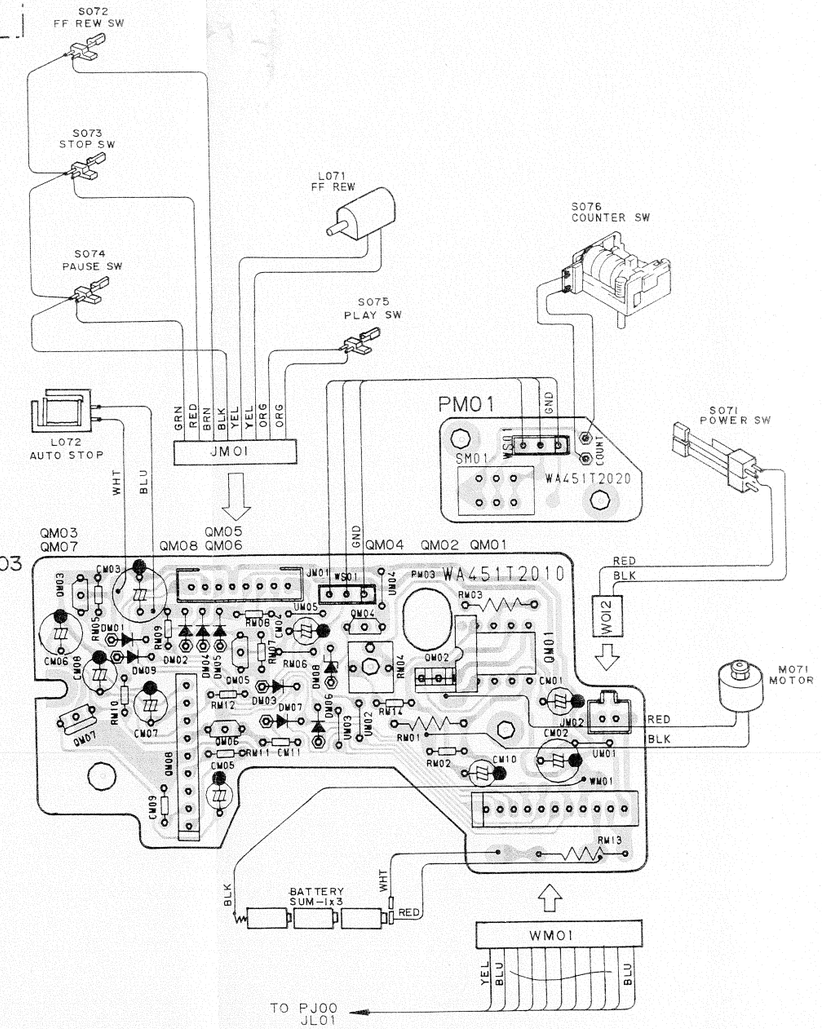




■▸ : PLAYBACK SIGNAL
▫▸ : REC SIGNAL
➡ : SOURCE MONITOR SIGNAL

PJ00

PS00

PE00

DTC144TS
QK02 ~ QK04,
QK31 ~ QK33

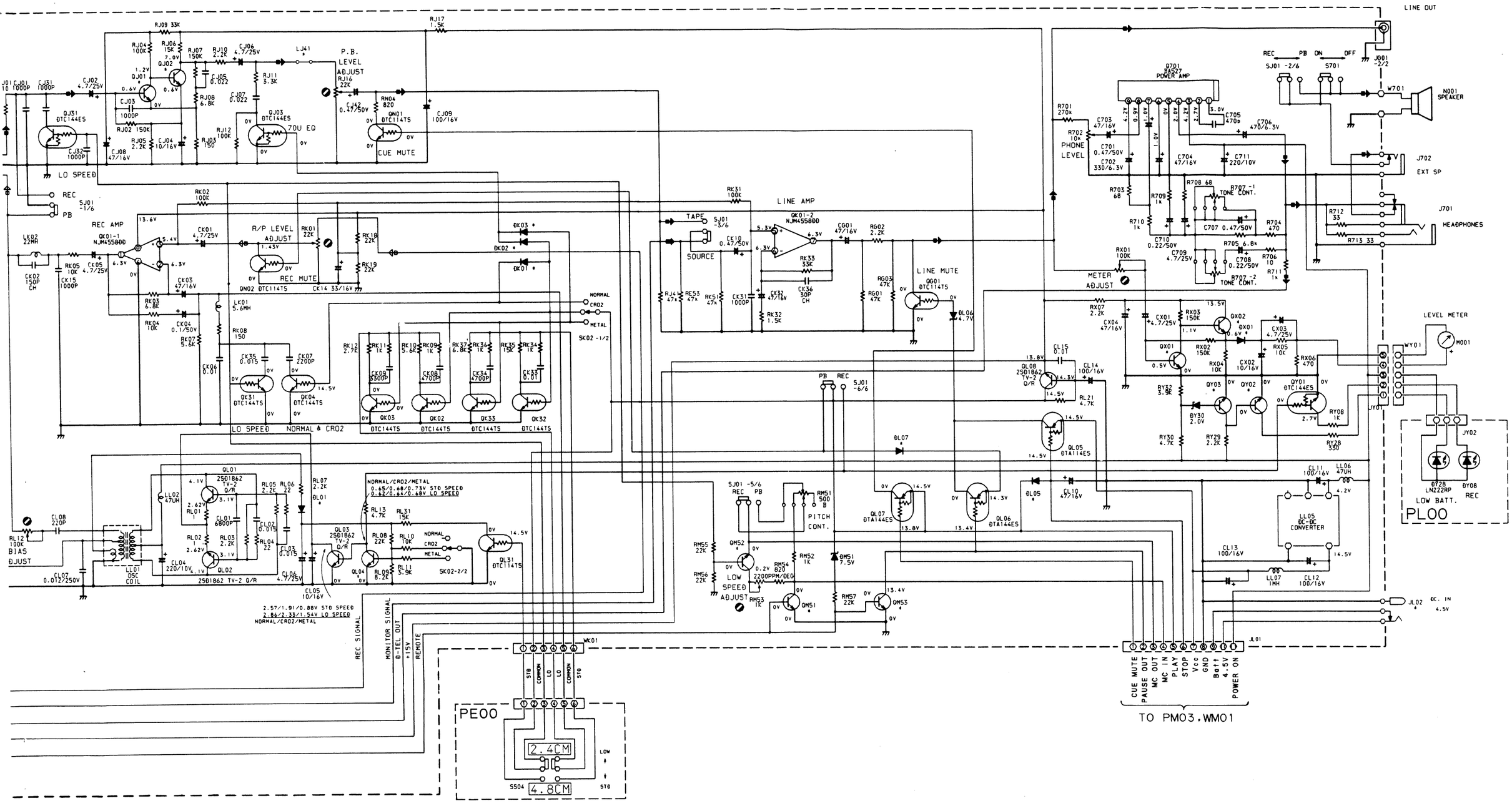
DTC114TS
QG01,
QL31,
QN01,
QN02

DTA114ES, etc
QL05

2SC3312,
2SC1740SLN
QE02, QE03,
QJ01, QJ02
QL04,
QM51 ~ QM53
QX01, QX02,
QY02, QY03

2SD1862 (Q, R)
QL01 ~ QL03,
QL08

DTA144ES
QL06,
QL07



DTC114TS
QG01, QL31, QN01, QN02

DTA114ES, etc
QL05

2SC3312, 2SC1740SLN
QE02, QE03, QJ01, QJ02
QL04,
QM51 ~ QM53
QX01, QX02, QY02, QY03

2SD1862 (Q, R)
QL01 ~ QL03, QL08

DTA144ES
QL06, QL07

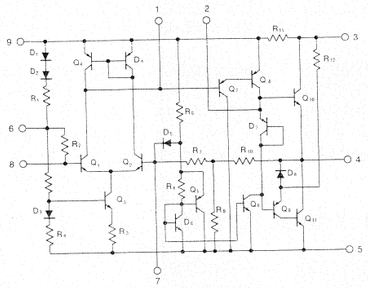
DTC144ES
QJ03, QJ31, QY01

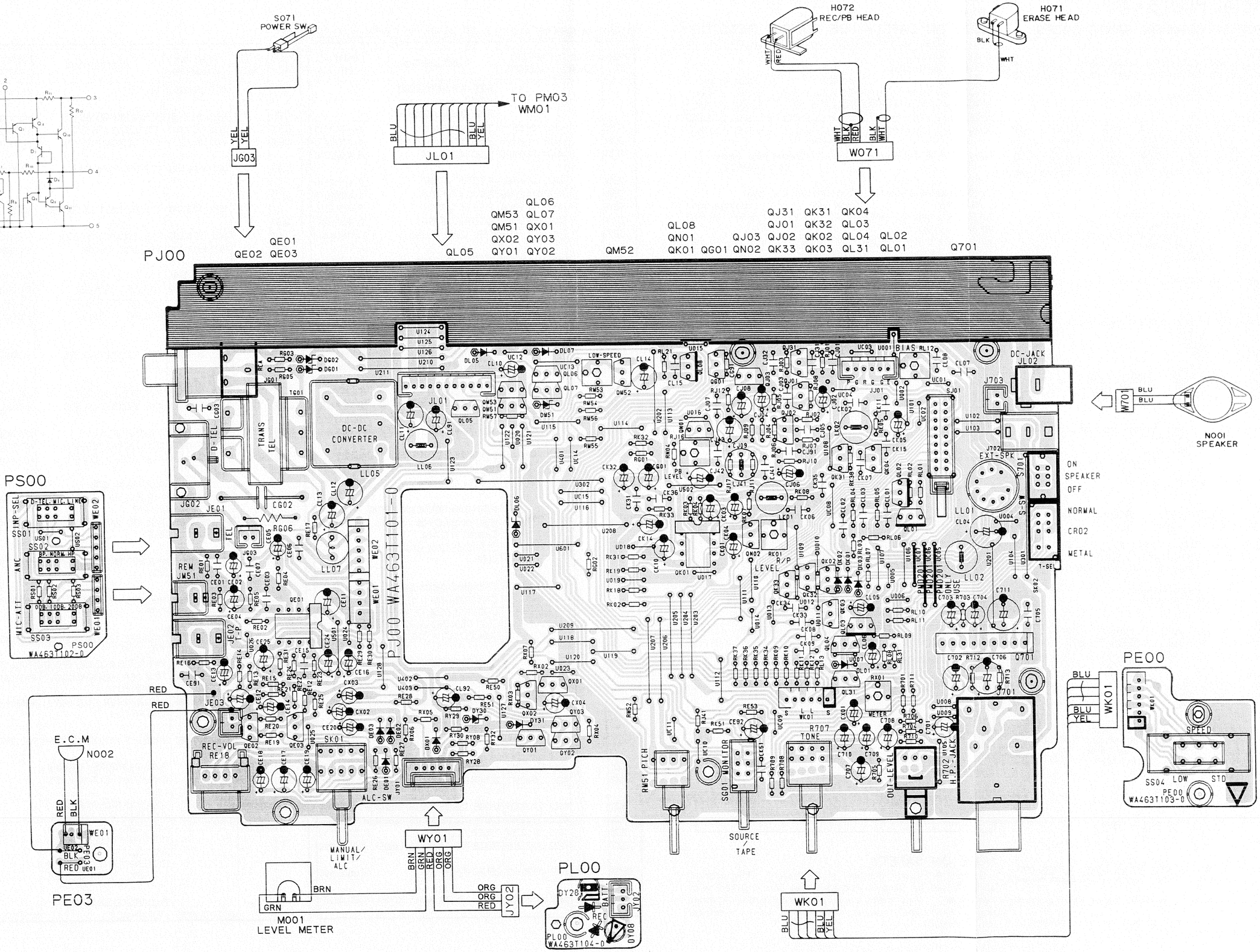
TOP VIEW
NJM2068DD
QE01

FRONT VIEW
BA527
Q701

TOP VIEW
NJM4558DD
QK01

Q701 BA527




S071
POWER SW
YEL
YEL
JG03
TO PM03
WM01
BLU
BLU
YEL
JL01
H072
REC/PB HEAD
WHT
RED
H071
ERASE HEAD
BLK
WHT
WHT
BLK
RED
BLK
WHT
WO71
PJ00
QE01
QE02 QE03
QL05
QL06
QM53 QL07
QM51 QX01
QX02 QY03
QY01 QY02
QM52
QL08
QN01
QK01 QG01
QJ03
QN02
QJ31 QK31 QK04
QJ01 QK32 QL03
QJ02 QK02 QL04 QL02
QK33 QK03 QL31 QL01
Q701
PJ00 WA463T101-0
DC-DC CONVERTER
TRANS
TEL
D-TEL
REC-VOL
RE18
SK01
ALC-SW
MANUAL/
LIMIT/
ALC
LOW-SPEED
BIAS
DC-JACK
JL02
J703
J702
EXT-SPK
S701
ON
SPEAKER
OFF
NORMAL
CRO2
METAL
T-SEL
S-SW
LL01
LL02
LEVEL
R/P
PB
LEVEL
R707
TONE
OUT-LEVEL
H.P. JACK
METER
SOURCE
/
TAPE
RM51 PITCH
SG01 MONITOR
W701
BLU
BLU
N001
SPEAKER
PS00
SS01
SS02
SS03
MIC-ATT
ANC
INP-SEL
D-TEL MIC LINE
BP NORM
0DB 10DB 20DB
PS00
WA463T102-0
RED
RED
E.C.M
N002
RED
BLK
RED
PE03
WE01
WE02
WE03
WY01
BRN
GRN
RED
ORG
ORG
ORG
JY02
BRN
GRN
M001
LEVEL METER
PL00
DY28
DY08
BATT.
REC
PL00
WA463T104-0
WK01
BLU
BLU
YEL
PE00
WK01
BLU
BLU
YEL
SPEED
SS04 LOW STD
PE00
WA463T103-0

(VERS: VERSION, U: U.S.A., F: Japan, K: Far East, /XX: Europe)

POS. NO	VERS COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (FOR U/K/F)
J702		4822 267 31172	JACK EXT SP OUT	YJ01002160
J703		4822 267 31035	JACK UP CONN. 2P SPK. WIRE	YJ06010590
JE01		4822 267 31172	JACK TEL PICK JACK	YJ01002160
JE02		4822 267 31172	JACK MIC JACK	YJ01002160
JG01		4822 267 30604	TERMINAL PIN JACK 2P LINE IN/OUT	YT02020280
JG02		4822 267 31173	JACK DIRECT TEL JACK	YJ01002430
JG03		4822 265 10111	JACK 2P CONECTOR MAIN TO POWER-SW	YJ06003020
JL02		4822 265 10085	JACK DC JACK EXT DC IN	YJ04000840
JM51		4822 267 31174	JACK REMORT JACK	YJ01002440
LL01		4822 157 62205	OSC TRANSF.	TC10150070
LL02		4822 157 53801	CHOKE COIL 47 µH 0.47 Ω	LC14730070
LL05		4822 146 10145	OSC TRANSF. DC-DC CONVERTER	TC10200090
LL06		4822 157 53801	CHOKE COIL 47 µH 0.47 Ω	LC14730070
LL07		4822 157 62204	CHOKE COIL 1 mH	LC21050710
S701		4822 277 30749	SLIDE SW SP ON/OFF 2-2	SS02020740
SK01		4822 273 10207	ROTARY SW ROTARY SW 2-3 SBM1023	SR02030130
TG01		4822 140 10387	OUTPUT TRANSF. DIRECT TEL IN/OUT TRANS	TO12414010
			PL00 - LED IND. CIRCUIT BOARD	
			PL00 - SEMICONDUCTORS	
DY08		4822 130 81358	L.E.D. LED REC. IND	HI10056020
DY28		4822 130 33173	L.E.D. LED BATT IND	HI10025020
DY30		4822 130 82609	ZENER DIODE MTZJ2.0B	HD30201000
			PM03 - MECHA. CONTROL CIRCUIT BOARD	
			PM03 - CAPACITORS	
CM01		4822 124 21899	ELECT 4.7 µF 25V	EJ47502510
CM05		4822 124 21894	ELECT 10 µF 16V	EJ10601610
CM07		4822 124 23055	ELECT 22 µF 10V	EJ22601010
CM08		4822 124 41245	ELECT 33 µF 10V	EJ33601010
CM10		4822 124 23054	ELECT 0.47UF 50V	EJ47405010
CM11		4822 122 40586	CER. 10000pF ±20%	DA17103110
			PM03 - CAPACITORS (COMMON)	
C***			Electrolytic Capacitor, ±20 % : CM02, CM03, CM06	
			PM03 - SEMICONDUCTORS	
DM01 | DM07		4822 130 33305	DIODE 1SS176, MA165, 1SS254	HD20002000
DM08		4822 130 80272	ZENER DIODE 7.5V	HD30751000
DM09		4822 130 33305	DIODE 1SS176, MA165, 1SS254	HD20002000
QM01		4822 209 83693	IC AN6612	HC10037020
QM02		4822 130 61439	TRS. 2SB1237 (R)	HT212371C0
QM03		4822 130 61892	TRS. 2SD2144S U OR V	HT421442A0
QM04		4822 130 42594	TRS. DIG. DTC144ES/UN4213	BA20002000
QM05		4822 130 61892	TRS. 2SD2144S U OR V	HT421442A0
QM06		4822 130 42594	TRS. DIG. DTC144ES/UN4213	BA20002000
QM07		4822 209 82278	IC DN6864	HC10024020
QM08		4822 209 83699	IC BA668	HC10039210
			PM03 - RESISTORS	
RM01		4822 116 30443	KANON-RES.ER 0.68 Ω 1/4W J 3900PPM/C	NB50064390
RM03		4822 116 30444	KANON-RES.ER 6.8K Ω 1/4W J 900PPM/C	NB56824090
RM04		4822 100 20681	TRIM. RES. 2.2KΩ RH0638CJ3R TYPE ALPS	RA02220780
RM13		4822 116 60423	METAL RES. 4.7 Ω ±5% 1W BATT. CHARG	NK05047010
			PM03 - RESISTORS (COMMON)	
R***			Carbon Film Fixed Resistor, ±5% 1/6 W: RM02, RM05-RM12, RM14	
			PM03 - MISCELLANEOUS	
JM02		4822 267 31203	JACK PH CONN. 2PIN TO PO-SW	YJ06006220
			PS00 - INPUT MOD SW CIRCUIT BOARD	
			PS00 - RESISTORS (COMMON)	
R***			Carbon Film Fixed Resistor, ±5% 1/6 W: RS01-RS03	
			PS00 - MISCELLANEOUS	
SS01		4822 277 21389	SLIDE SW	SS02030290
SS02				
			PE00 - SPEED SW CIRCUIT BOARD	
			PE00 - MISCELLANEOUS	
SS04		4822 277 30751	SLIDE SW, TAPE SPEED SELECT 2-2	SS02020760

(VERS: VERSION, U: U.S.A., F: Japan, K: Far East, /XX: Europe)

POS. NO	VERS COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (FOR U/K/F)
			PJ00 - R/P AMP CIRCUIT BOARD	
			PJ00 - CAPACITORS	
CJ02		4822 124 21899	ELECT 4.7 µF 25V	EJ47502510
CJ04		4822 124 21894	ELECT 10 µF 16V	EJ10601610
CJ06		4822 124 21899	ELECT 4.7 µF 25V	EJ47502510
CJ42		4822 124 23054	ELECT 0.47 µF 50V	EJ47405010
CK01		4822 124 21899	ELECT 4.7 µF 25V	EJ47502510
CK02		4822 122 10367	CER. 150pF J ±5%	DD15151300
CK04		4822 124 41604	ELECT 0.1 µF 50V	EJ10405010
CK05		4822 124 21899	ELECT 4.7 µF 25V	EJ47502510
			PJ00 - CAPACITORS (COMMON)	
C****			High Dielectric Constant Ceramic Capacitor, ± 10% 50: CJ01, CJ03, CJ31, CJ32, CK15,	
C****			Electrolytic Capacitor, ±20 % : CJ08, CJ09, CK03, CK14, CJ08, CJ09, CK03, CK14	
			Plastic Film Capacitor, 5% 50V: CJ05, CJ07, CK06-CK09, CK33-CK35, CJ05, CJ07, CK06-CK09, CK33-CK35	
			PJ00 - SEMICONDUCTORS	
DK01 | DK03		4822 130 33305	DIODE 1SS176, MA165, 1SS254	HD20002000
JJ01		4822 265 30671	PLUG UP CONN. 6P HEAD WIRE	YP06006660
LK01		4822 157 62213	CHOKE COIL 5.6 MH J	LC25650710
LK02		4822 157 53521	CHOKE COIL TL-8 223J	LC22260710
QJ01		4822 130 43313	TRS. 2SC3312 (R,S), ETC	HT30002000
QJ02		4822 130 43313	TRS. 2SC3312 (R,S), ETC	HT30002000
QJ03		4822 130 42594	TRS. DIG. DTC144ES	BA20012210
QJ31		4822 130 42594	TRS. DIG. DTC144ES	BA20012210
QK01		4822 209 83631	IC NJM4558DD	HC10008090
QK02 | QK03		4822 130 61188	TRS. DIG. DTC144TS	BA20016210
QK31 | QK33		4822 130 61188	TRS. DIG. DTC144TS	BA20016210
QN01		4822 130 61189	TRS. DIG. DTC114TS	BA20017210
QN02		4822 130 61189	TRS. DIG. DTC114TS	BA20017210
			PJ00 - RESISTORS	
RJ16		4822 100 11352	TRIM. RES. 22KΩRH0634CJ4R TYPE ALPS	RA02230780
RK01		4822 100 11352	TRIM. RES. 22KΩ RH0634CJ4R	RA02230780
			PJ00 - RESISTORS (COMMON)	
R****			Carbon Film Fixed Resistor, ±5% 1/6 W: RJ01-RJ12, RJ17, RJ41, RK02-RK05, RK07-RK12, RK18, RK19, RK34-RK37, RN04	
			PJ00 - MISCELLANEOUS	
SJ01		4822 277 21391	SLIDE SW R/P SW 6-2 SHORT	SS06020570
SK02		4822 277 21388	SLIDE SW TAPE SELECT 2-3	SS02030230

MARA-00659

SERVICE MANUAL

PMD221/201

marantz®

model PMD221/201

Stereo Cassette Recoder

659

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound. Only **original MARANTZ parts** can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available at our National Marantz Subsidiary or Agent.

MARANTZ EUROPE B.V.
P.O. Box 80002
Building SFF 2
5600 JB Eindhoven
The Netherlands
Phone : +31-40-732241
Fax : +31-40-735578

ORDERING PARTS

Parts can be ordered either by mail or by telex. In both cases, the correct part number has to be specified.
The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which the part is required
5. Way of shipment
6. Signature: any order form or telex must be signed, otherwise such part order will be considered as null and void.

ADDRESSES

AUSTRALIA
MARANTZ AUSTRALIA
Figtree Drive
Australia Centre
Homebush, NSW 2140
AUSTRALIA

AUSTRIA
MARANTZ
Hietzinger Kai 137a
1130 Wien
Austria

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P.O.Box 80002
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Casilla 2687
Santiago
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2630 Tastrup
Denmark

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00520
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Finland

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MARANTZ FRANCE
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Athens 11471
Greece

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Piazza IV Novembre 3
20124 Milano
Italy

JAPAN
MARANTZ JAPAN INC.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan

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22052 Kuwait

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AL ALAMIAH ELECTRONICS
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Riyadh 11432
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MARANTZ S.A.
10 Bond Street
Randburg 2194
P.O. Box 7703
Johannesburg 2000
South Africa

SPAIN
MARANTZ SPAIN
Martinez Villergas 2
Apartado 2065
Madrid 28027
Spain

SWEDEN
MARANTZ
Box 1324
17125 Solna
Sweden

SWITZERLAND
MARANTZ SWITZERLAND
Postfach
8010 Zürich-Müllingen
Switzerland

TRADING
MARANTZ TRADING
P.O.Box 20008
Building SFF 2
5600 JB Eindhoven
The Netherlands

All of the above locations are fully equipped to take care of your total service needs or can advice you. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country.
In the event that there is no service location listed for your country, please contact the nearest facility for the necessary assistance.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

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How to use this service manual

- The "Common parts" which Marantz Japan, Inc. has established are eliminated from this service manual.
- These "Common parts" are applied to all models in the service manuals arranged and issued by MJI.
- To indicate clearly the common parts in the schematic diagram, a line is drawn above or under the Ref. Desig. No. of applicable parts.
- "Common parts" can be supplied from the Marantz service center as ever.
  In case of ordering, please establish the parts number of 10 figures following the procedure mentioned in this service manual "How to establish the parts number for common parts".

(NOTE)
When you order parts to the Marantz parts center, please take notice of the following points.

1) Please correctly write the parts number of 10 figures following the rule.
2) Since ordering parts by the Ref. Desig. No. or ratings indicated in the schematic diagram does not satisfy the above conditions, the Marantz parts supply system does not work properly.
   As this case is apt to cause a trouble, please pay attention to it.

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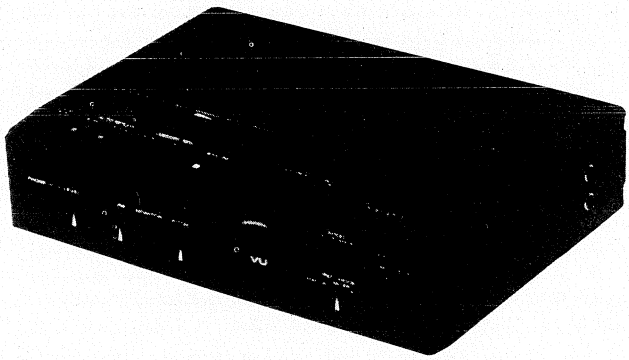
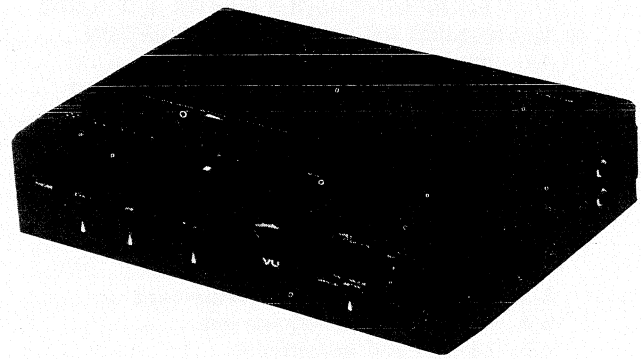
MODEL PMD221/201 STEREO CASSETTE RECORDER



PMD221



PMD201

INTRODUCTION

This service manual are prepared for use by Authorized Warranty Station and contains service information for Marantz Stereo Cassette Recorder.

Servicing information and voltage data included in this manual are intended for use by the knowledgeable and experienced technician only. All instructions should be read carefully. No attempt should be made to proceed without a good understanding of the operation of the Cassette Recorder.

The parts list furnishes information by which replacement parts may be ordered from the Marantz Company. A simple description is included for parts which can be usually obtained through local suppliers.

1. SHOCK, FIRE HAZARD SERVICE TEST:

CAUTION: After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be reparied or corrected before AC power is applied, and verified before return to user/customer.

Ref. UL Standard NO. 1270. Para 66. 3. D (Mandatory Test after servicing Electrical Appliances, effective 7-1-83).

2. P.W. BOARDS

As can be seen from the circuit diagram, the chassis of your Cassette Recorder consists of the following units. Each unit mounted on a printed circuit board is described within the square enclosed by a bold dotted line on the circuit diagram.

1. Rec/Play Amp ..... Mounted on P.W. Board PJ00
2. Switch Board ..... Mounted on P.W. Board PS00
3. LED ..... Mounted on P.W. Board PL00
4. Mecha Control ..... Mounted on P.W. Board PM00
5. Speed Switch ..... Mounted on P.W. Board PS01
6. Memory Switch (PMD221 only) Mounted on P.W. Board PM01

3. TEST EQUIPMENT REQUIRED FOR SERVICING

For measuring or checking your Cassette Deck, the following instruments and materials are necessary:

- VTVM
- Audio Oscillator (AF OSC)
- Attenuator (600 Ω)
- Oscilloscope
- Bandpass Filter (1 kHz)
- IEC A-Curve Filter
- Wow and Flutter Meter
- Torque Meter (Cassette Type)
- Digital Frequency Counter
- Distortion Meter
- Blank Tapes (Completely erased with bulk eraser)
  TDK AC-212 (Normal)
  TDK AC-512 (Special/CrO_2)
  TDK AC-712 (Metal)

NOTE:
If any doubt is noted in a measured value, use new tape.

- Test Tapes (New Tape)
  TCC-111•MTT-111 Wow and Flutter, Tape Speed
  TCC-140•MTT-112B Signal-to-Noise Ratio
  TCC-130•MTT-150 Adjustment of Output Level
  TCC-161•MTT-256 Frequency Response (for Normal)
  TCC-261•MTT-356 Frequency Response (for Special/CrO_2 and Metal)
  TCC-192•MTT-121 Cross Talk
  TCC-194•MTT-141 Channel Separation
  (A-BEX)•(TEAC)

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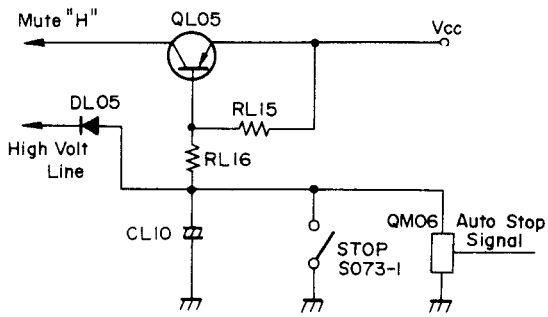
4. MECHANISM AND CIRCUIT DESCRIPTION

4.1 Muting System

The muting circuit is provided to reduce the pops noise when generates on the Line Out at power ON/OFF.

1) **When power is turned on . . . . .**
   As the emitter voltage of QL05 is higher than the base voltage during the charge current flows to CL10 through RL15 & RL16, QL05 is ON and it sends the muting voltage.
   CL10 has been charged up, both the base and the emitter voltages of QL05 are equal. QL05 is OFF and the muting is released.

2) **When the STOP button is depressed . . . . .**
   When the stop switch S073-1 is ON, the base current flows through. Also discharging CL10, QL05 is ON instantly, the muting system operates to reduce the pops noise at power ON/OFF.
   QM06 provides to discharge CL10 on AUTO STOP.
   As the muting time is in proportional to capacitance of CL10, it is preset by matching the threshold time of TAPE EQ Amp.
   DL05 provides to discharge CL10 on FF and REW.



4.2 Auto Play and Automatic Rewind Stop (PMD221 only)

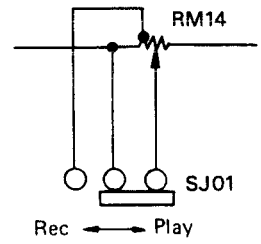
With SS01 set to ON during PLAY, the rewind button will lock when pressed. When counter reaches 999, the rewind lock releases and the PLAY operation resumes. In this condition, both CUE and REVIEW buttons do not operate and both buttons are locked. Also, when the FF button is pressed and locked in place, the lock releases when the counter reaches "900" and the PLAY mode is entered. When the tape has finished winding in both modes before the counter reaches the respective positions, the AUTO STOP function and all buttons are released. Also when the REWIND button alone is locked, the tape rewinds and rewind stops when the counter reaches "999". The same applies for fast foward operation which stops at "900". When the counter is between "900" and "999", both REWIND and FF buttons do not lock.

4.3 Auto Stop

The AUTO STOP function which detects the end of the tape is carried out by hole IC (QM07). The signal from QM07 is added to the pin④of QM08, while the auto stop duration is designated inside QM08. The time it takes for the auto stop function to activate after the tape stops, is determined in CM08. At this time TE is TE = 75 x CM08 (μF)mSec, while TW is TW = 30 x CM07 (μF)mSec as long as the auto stop function is operating. When it does not shut off the first time, TE--TW--TE--TW is repeated until it shuts off.

4.4 Pitch Control

The pitch control is used to vary the tape speed for playback operation. During recording, it is automatically set to the RM14 center position by SJ01.

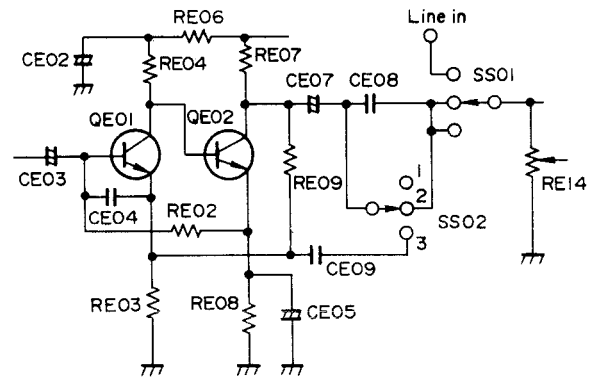


4.5 Ambient Noise Control (ANC)

ANC changes the bandwidth of the signals with the Mic Amp.

1. High pass
2. Normal
3. Band pass

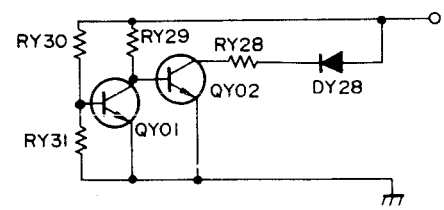
CE08 and RE14 determine the Low Frequency cut. The NF volume of CE09 determines the High Frequency cut.



4.6 Low Battery Indicator

This circuit illuminates the LED when the supply voltage level is attenuated.

The dividing ratio for RY30 and RY31 determines the voltage at which the light is illuminated.
LED (DY28) is lit up when the base voltage of QY01 is less than about 0.6V.



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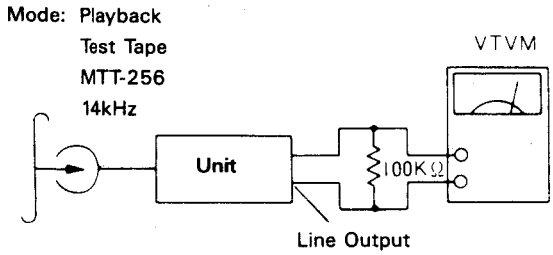
5. ELECTRICAL ADJUSTMENTS

Precautions for Adjustment and Measurement

1. Before playing back the test tape, thoroughly demagnetize the heads, capstan and similar metal parts using an erase, as the test tape-recorded tone is easily erased.
2. Do not place the test tape on any measuring instrument.
3. Do not put the test tape near a place where the eraser is used.
4. Method of Demagnetization: Turn the eraser power switch on at a position far away from the heads. Bring the eraser close to the heads, capstan and other parts to be demagnetized, and move it up and down four or five times to demagnetize. Slowly separate the eraser far away from the parts, and turn the power switch off.
5. Do not use any magnetized adjusting tool. If necessary, demagnetize with a bulk eraser from time to time in the course of each adjustment.
6. Do not turn semi-fixed resistor or coil more than needed.
7. Measure speed and wow and flutter in the normal operating state.
8. Do not apply locking bond excessively.

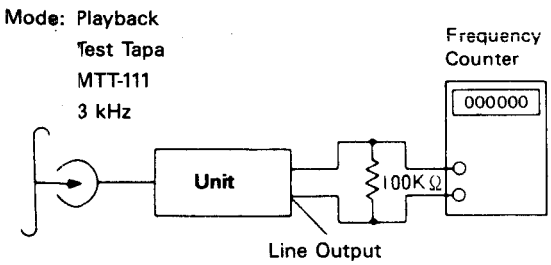
5.1 Head Azimuth Adjustment

1. Play the test tape MTT256 back. Adjust the head azimuth adjusting screw for maximum VTVM reading.
2. After adjustment, repeat the playback and stop settings several times to confirm no azimuth deviation.
3. After adjustment, lock the screws with bond.



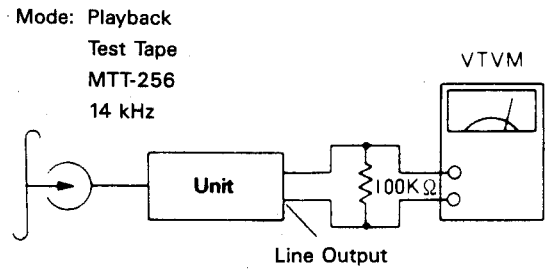
5.2 Tape Speed Adjustment

1. Play the 3kHz signal of the test tape MTT-111 back.
2. Adjust the adjusting resistor (RM04) on the PM00 P.W. Board so that counter readings are between 2990 — 3010Hz.
3. Then, adjust the Speed Selector Switch to LOW PLAY, and play MTT-111 back.
4. Adjust the adjusting resistor (RM15) on the PJ00 P.W. Board so that the counter readings are between 2900 — 3010 Hz.



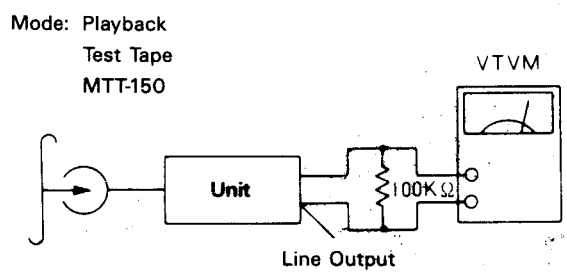
5.3 Playback Equalizer Measurement

1. Adjust the tape selector switch to NORMAL.
2. Play the 315Hz signal of the test tape MTT-256 back. The VTVM at OdB.
3. Play the 12.5kHz signal of the test tape back. Confirm a frequency response of 0 to 2dB in reference to the 315Hz signal level. Then, play the 12,5kHz signal back. Set the tape selector to CrO_2, Metal. Confirm the 12.5kHz signal readings at — 4.5dB, ± 1dB.



5.4 Playback Level Adjustment

1. Adjust the Tape Selector Switch to NORMAL and turn the NR switch OFF.
2. Play the test tape MTT-150 back. Adjust RJ16 so that the voltage of Line output is 580mV.



5.5 Level Meter Adjustment

1. Adjust the Tape Selector Switch to NORMAL.
2. Play the test tape MTT-150 back. Adjust RX01 at 0dB Level Meter reading.

5.6 Playback Noise Measurement

1. Set the selector switch to NORMAL.
2. Play back the blank tape and make sure that the noise volume is below 2mV when the REC LEVEL Knob is set to both maximum and minimum.

NOTES:

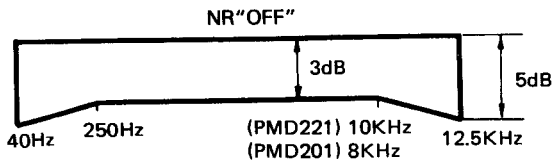
1. Perform measurements when the power hum is a at minimum.
2. Perform measurements under conditions where induction noise will not affect measurements.

Mg076

5.7 Record/Playback Frequency Response and Recording Level Adjustment

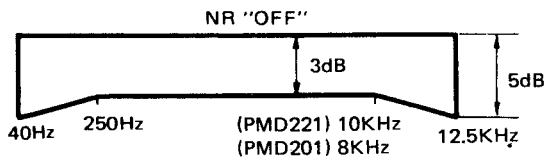
[NORMAL]

1. Set the tape selector switch to NORMAL.
2. Insert the AC-212 test tape in the cassette holder and set the recording conditions. (Set the monitor switch to SOURCE) and attenuate from 1kHz, 580mV to — 25dB on Line Out. (The direction included in parenthesis is applicable only for the PMD221.)
3. Rewind and play the tape back, then set RL12 so that the level of 1kHz is brought within ±0.5dB.
4. When playing the tape back, set RK01 so that the level of 1kHz is the same as that on the Rec Monitor.
   Change the Monitor Switch to TAPE SOURCE, and set RK01 so that the level of 1kHz is the same as that before.
5. After making these adjustments, record and play back at 1kHz, 10kHz, 12.5kHz. Make sure results comply with the following diagram.



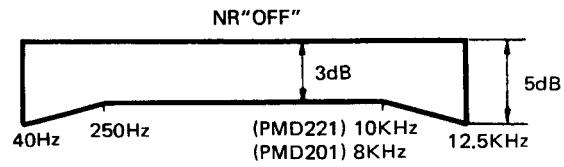
[CrO_2]

1. Set the tape selector switch to CrO_2.
2. Insert the AC-512 test tape in the cassette holder and set the recording conditions. Attenuate from 580mV to − 25dB on Line Out with the attenuator and record at 1kHz, 10kHz, and 12.5kHz on an unrecorded section of the tape.
3. Record and playback at 1kHz, 10kHz, and 12.5kHz.
   Make sure results comply with the following diagram.



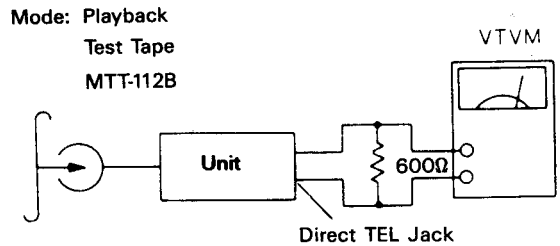
[METAL]

1. Adjust the Tape Selector Switch to METAL.
2. Load the test tape AC-712 into cassette holder. Perform measurements as with CrO_2, and make sure they conform with the Chart.



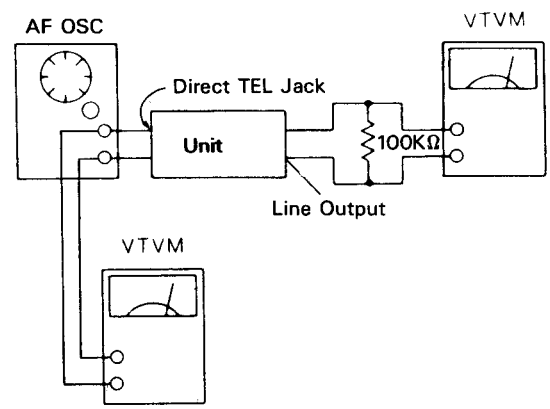
5.8 Direct Telephone Output Measurement

1. Play the test Tape MTT-112B back.
2. Perform measurements of the output voltage on the Direct TEL Jack, when the Monitor volume is at the maximum setting.



5.9 Direct Telephone Input Measurement

1. Set the recording conditions, and adjust the Monitor Switch to SOURCE.
2. Set the Rec Level to maximum, the Rec Mode to MANUAL.
3. Add a 1kHz signal to Direct TEL Jack, and set the input signal to attenuate from 580mV to −3dB on Line Output.



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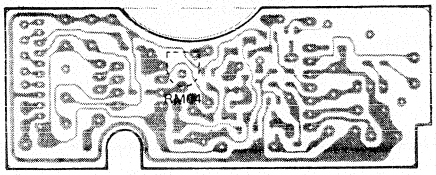
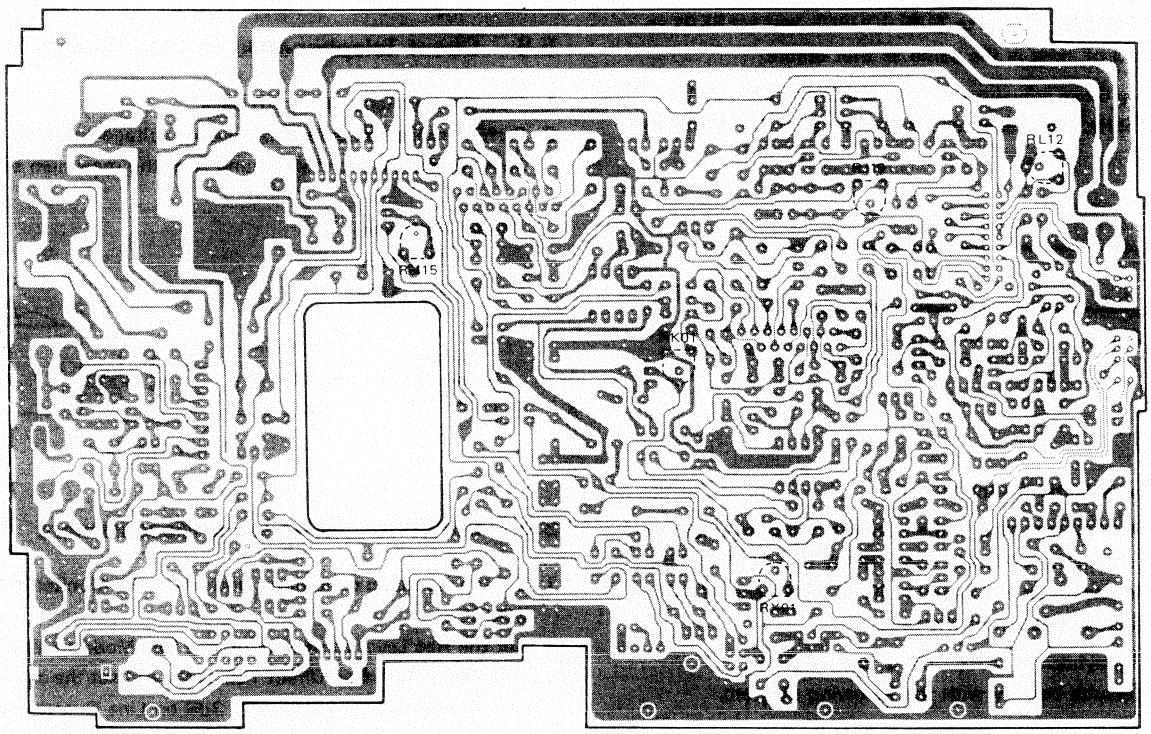
5.10 Alignment Points

PM00



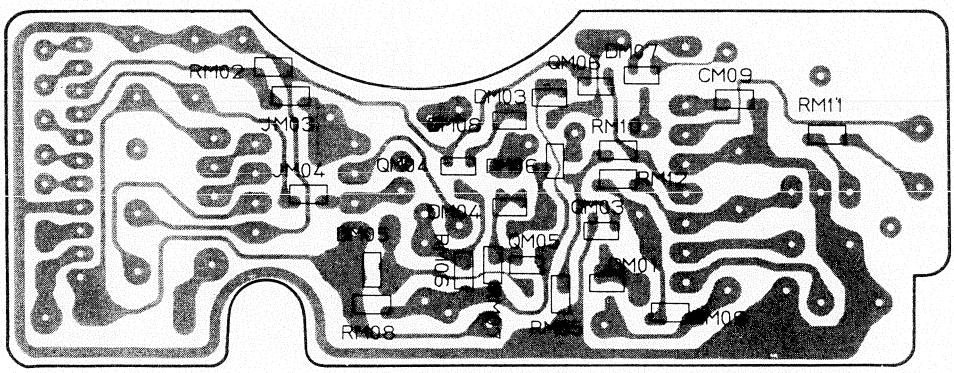
PJ00



6. DIAGRAMS

6.1 Chip Parts Component Locations

PM00



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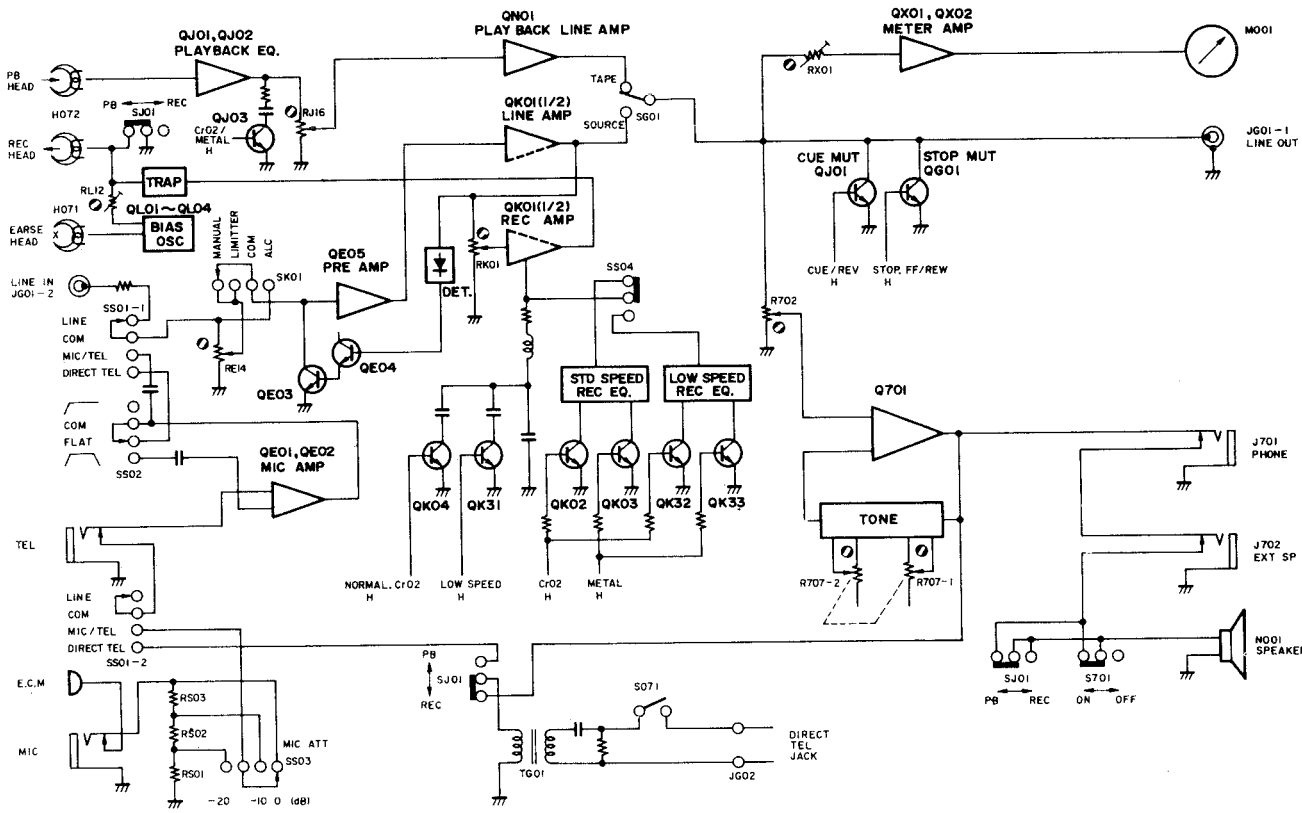
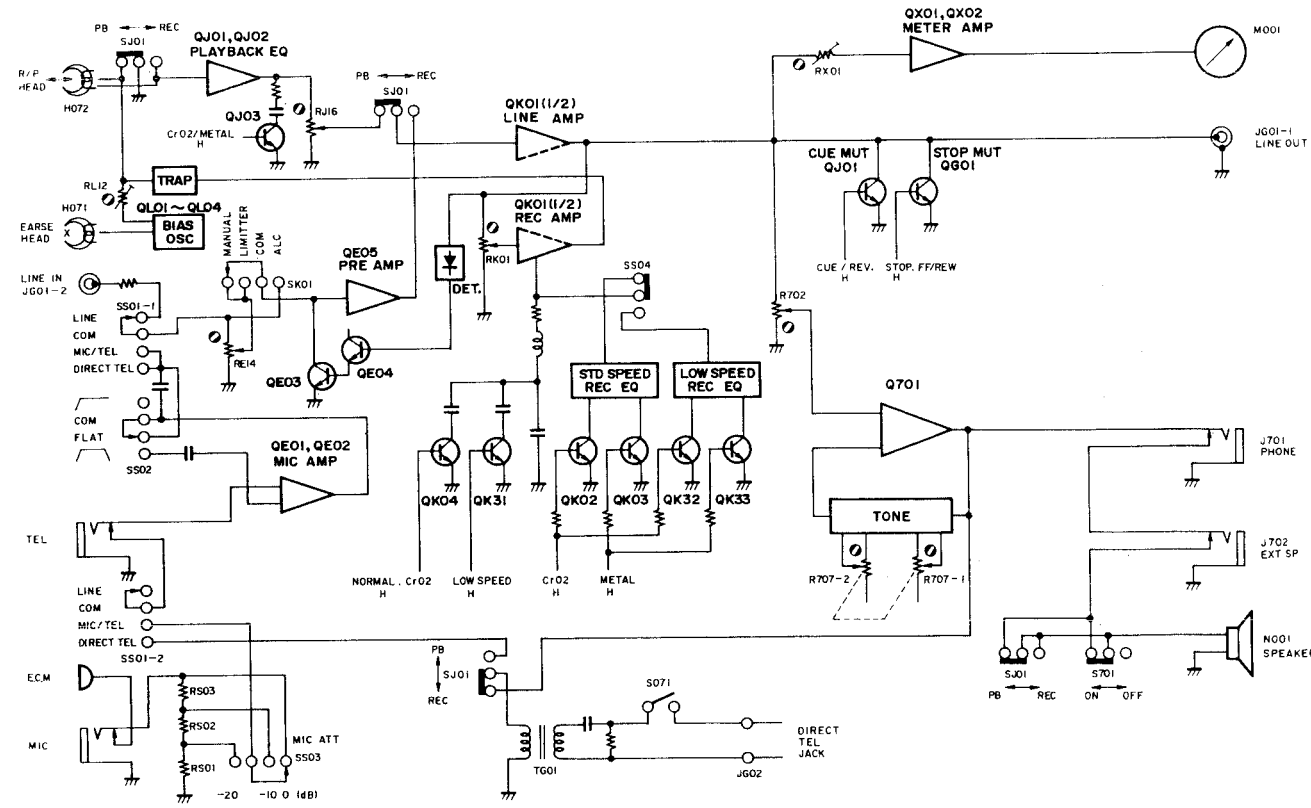
6.2 Block Diagrams

(PMD221)

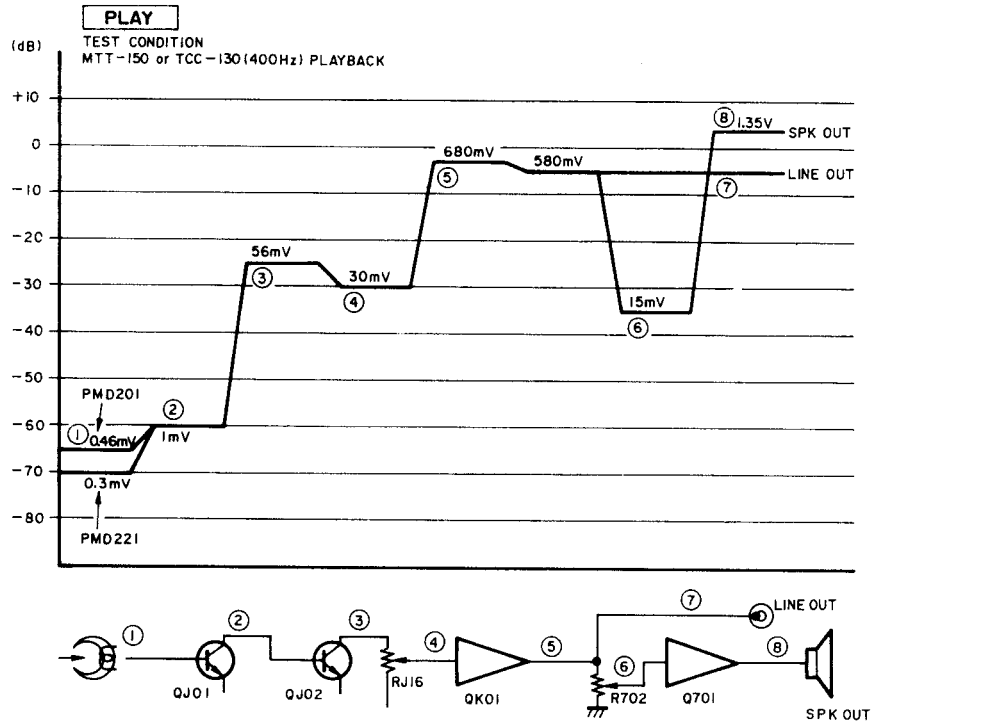


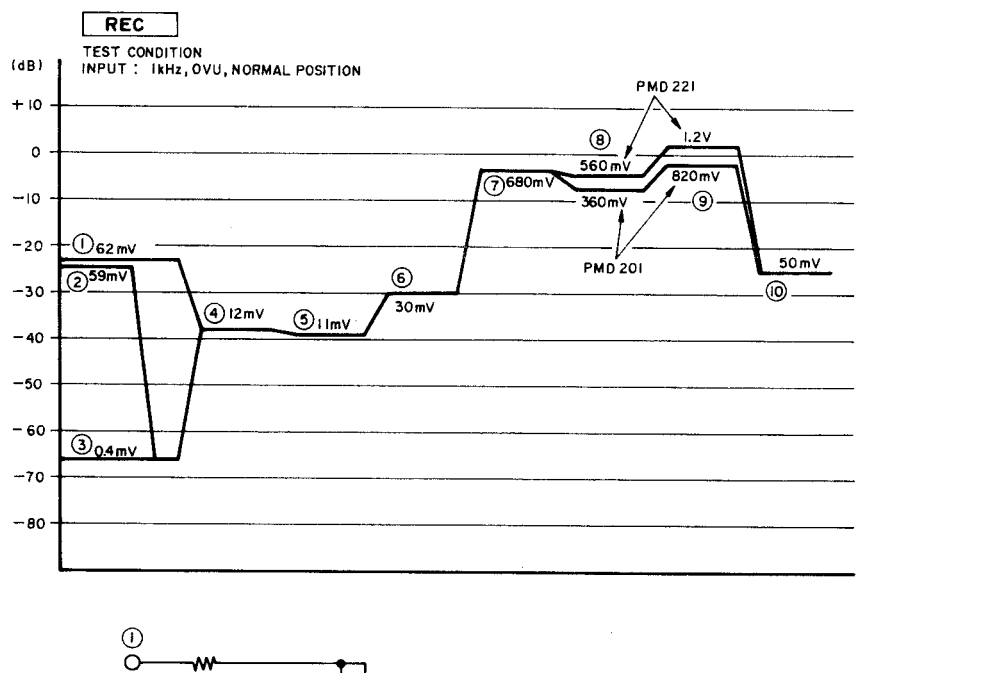
(PMD201)

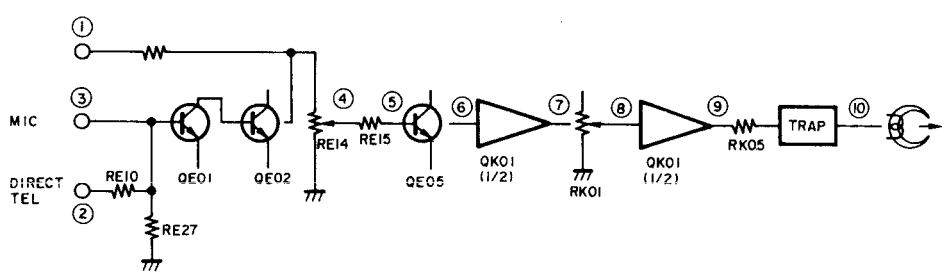


M9079

6.3 Level Diagram PMD201/221







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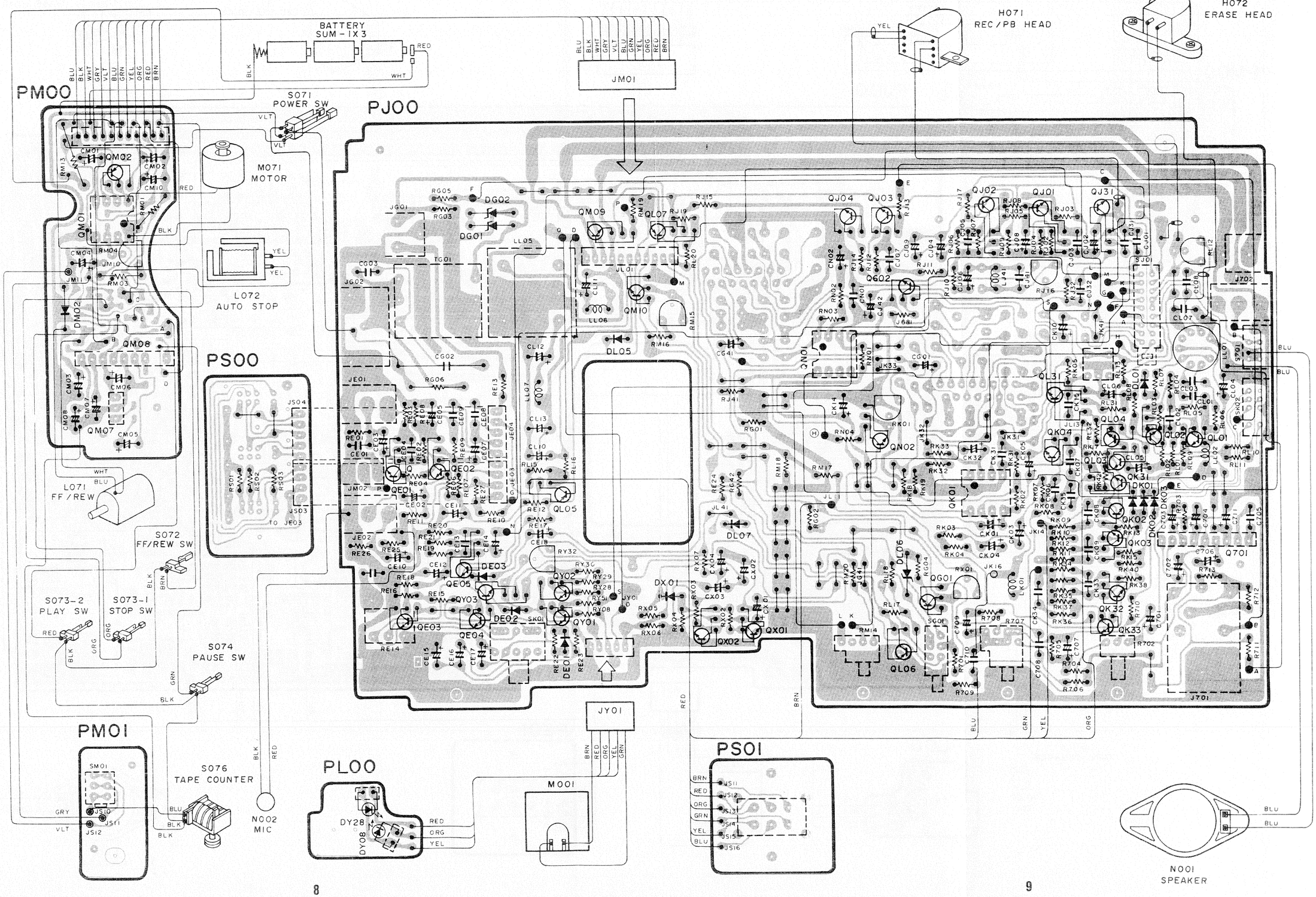
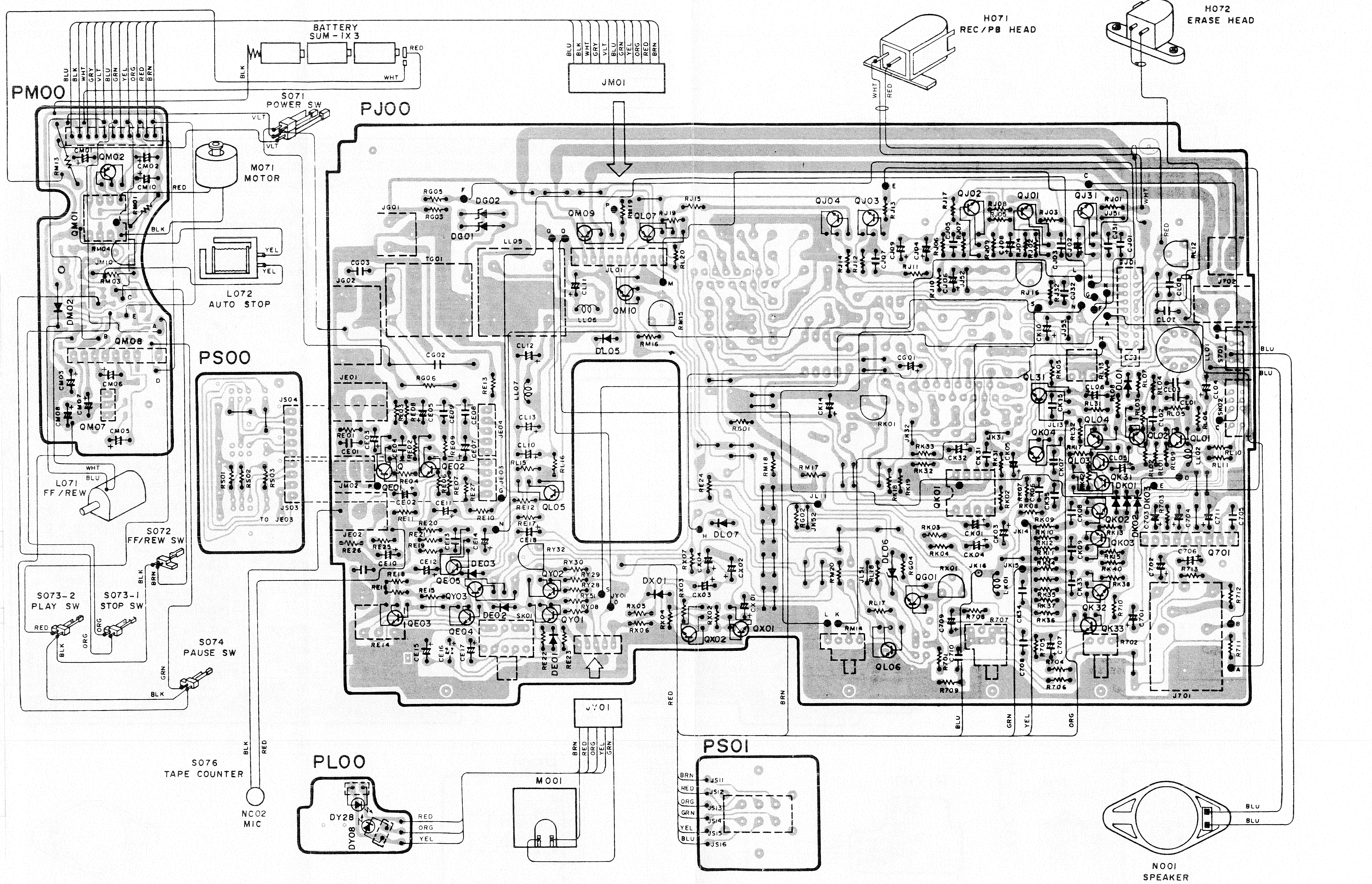

PM00
BATTERY
SUM-1X3
S071
POWER SW
M071
MOTOR
L072
AUTO STOP
PS00
PJ00
JM01
H071
REC/PB HEAD
H072
ERASE HEAD
S072
FF/REW SW
L071
FF/REW
S073-2
PLAY SW
S073-1
STOP SW
S074
PAUSE SW
PM01
S076
TAPE COUNTER
N002
MIC
PL00
DY28
DY08
M001
JY01
PS01
N001
SPEAKER
Q602
QM10
QJ04
QJ03
QJ02
QJ01
QJ31
QL31
QL04
QL03
QL02
QL01
QK04
QK03
QK02
QK01
QK31
QK32
QK33
QN01
QN02
QL07
QL06
QL05
QE01
QE02
QE03
QE04
QE05
QY01
QY02
QY03
QX01
QX02
QG01
Q701
DE01
DE02
DE03
DG01
DG02
DL07
DL06
DL05
DK01
DK02
DK03
DM02
DX01
J701
J702
BLU
GRN
YEL
ORG
RED
BRN
BLK
WHT
GRY
VLT

Mg081

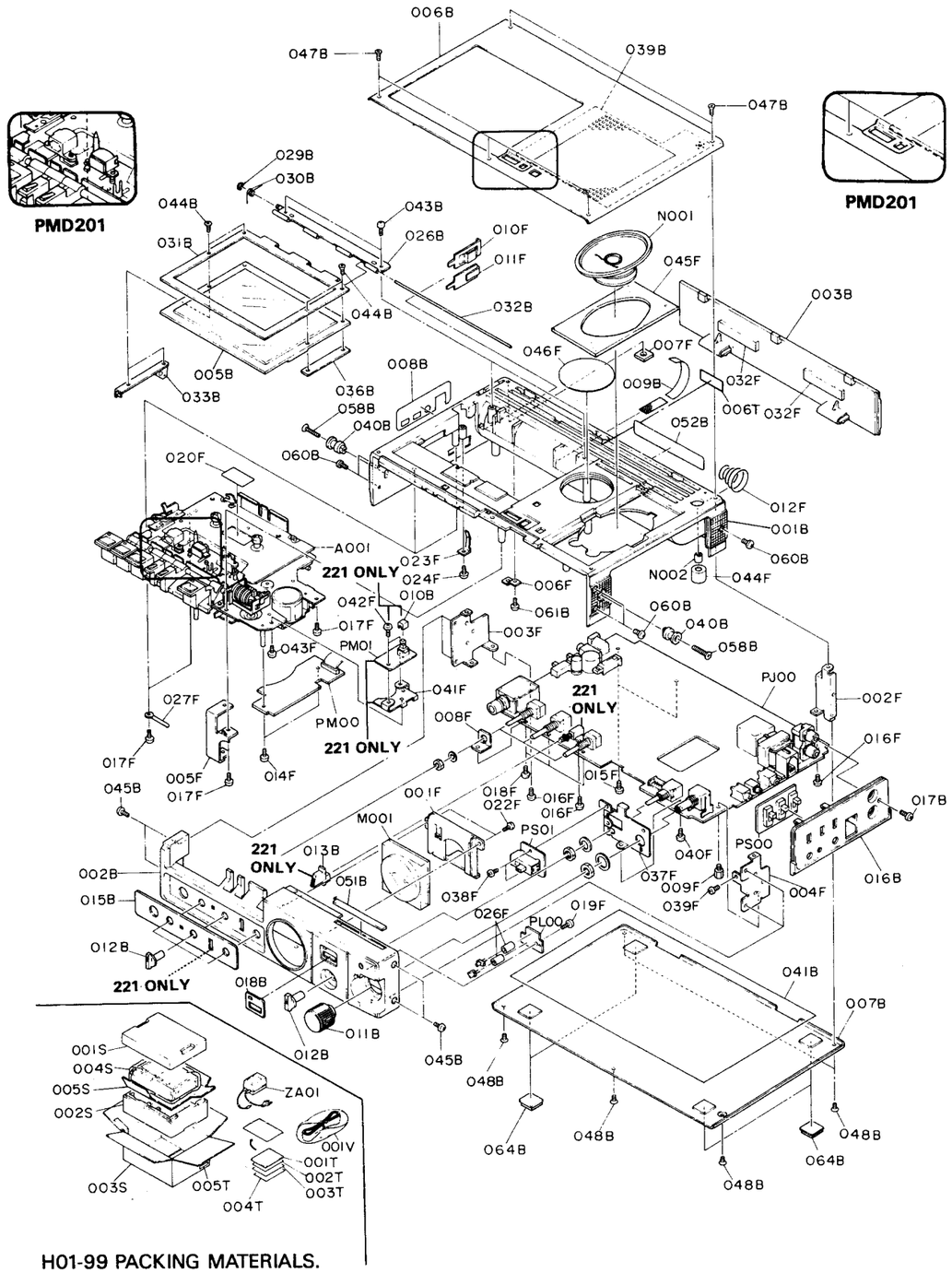
Model PMD201



Mg082

7. EXPLODED VIEW AND PARTS LIST

[C01-99] FRONT PANEL AND GENERAL PARTS



H01-99 PACKING MATERIALS.

REF. DESIG.	PART NO.	DESCRIPTION
001B	153T064060	Case (A), Top
002B	196T248010	Front Panel (PMD221)
002B	196T248110	Front Panel (PMD201)
003B	153T257010	Lid, Battery
005B	153T257030	Lid, (C) Cassette
006B	196T053010	Cover (A), Top (PMD221)
006B	196T053110	Cover (A), Top (PMD201)
007B	153T053100	Cover (B), Bottom (PMD221)
007B	153T053110	Cover (B), Bottom (PMD201)
008B	196T861010	Label, Case (A)
009B	196T007010	Strip, Battery
010B	196T270010	Button, Memory REW (PMD221)
011B	196T154010	Knob, REC Level
012B	153T154030	Knob, LEVEL, TONE, PITCH, REC MODE
013B	153T154040	Knob, MONITOR (PMD221)
015B	196T265010	Indicator, Front (PMD221)
015B	196T265110	Indicator, Front (PMD201)
016B	196T265020	Indicator, Jack Board
017B	51300312U0	P.H. Tapped Screw P3x12
018B	196T303010	Mask, Indicator
026B	153T153500	Hinge Ass'y (A)
029B	64002500A0	RG Ring, E
030B	153T115090	Spring
031B	153T153020	Hinge (B)
032B	153T112380	Shaft (B)
033B	153T104500	Retainer Ass'y
036B	153T104040	Retainer (C)
039B	196T107010	Sheet
040B	153T055010	Collar
041B	153T120010	Insulator
043B	51302606U0	P.H. Tapped Screw P2.6x6
044B	51840204S0	F.H.M. Screw F2x4
045B	51102606S0	B.H.M. Screw B2.6x6
047B	51842607S0	F.H.M. Screw F2.6x7
048B	51842605S0	F.H.M. Screw F2.6x5
051B	153T251010	Badge
052B	153T861010	Label
058B	51040318S0	F.H.M. Screw F3x1.8
060B	51102606S0	B.H.M. Screw B2.6x6
061B	51300306B0	P.H. Tapped Screw P3x6
064B	153T057000	Leg, Cover (B)
001F	196T104010	Retainer
002F	153T160050	Bracket (A)
003F	153T160060	Bracket (B)
004F	196T160030	Bracket (C)
005F	153T160080	Bracket (D)
006F	153T104050	Retainer (D)
007F	153T104060	Retainer (E)
008F	153T104070	Retainer (F)
009F	153T113010	Stud
010F	153T129010	Terminal (+)
011F	153T129020	Terminal
012F	YL11010090	Terminal (−)
014F	51062605A0	P.H.M. Screw P2.6x5
015F	51302608B0	P.H. Tapped Screw P2.6x8
016F	51572606B0	P. Tapped Screw P2.6x6
017F	51300308B0	P.H. Tapped Screw P3x8
018F	51572604B0	P. Tapped Screw P2.6x4
019F	51300306B0	P.H. Tapped Screw P3x6
020F	251T274010	Reflector
022F	51300308B0	P.H. Tapped Screw P3x8
023F	153T115100	Spring
024F	51300306B0	P.H. Tapped Screw P3x6
026F	153T055020	Collar

REF. DESIG.	PART NO.	DESCRIPTION
027F	422005020	Clamper
032F	320Z060010	Clinger
037F	196T160020	Bracket (PMD221)
038F	51062605A0	P.H.M. Screw P2.6x5 (PMD221)
039F	51062605A0	P.H.M. Screw P2.6x5
040F	51062605A0	P.H.M. Screw P2.6x5
041F	196T160050	Bracket
042F	51062605A0	P.H.M. Screw P2.6x5
043F	51060303A0	P.H.M. Screw P3x3 (PMD221)
044F	305H056010	Buffer
045F	196T056010	Buffer
046F	196T257010	Lid, Speaker Hole
A001	196T304500	Mechanism Assembly (PMD221)
A001	195T304500	Mechanism Assembly (PMD201)
M001	IM31040030	V.U. Meter
N001	QJ72478010	Speaker 4Ω 0.5W
N002	MS50000150	Mic Unit, ECM
		H01-99 PACKING MATERIALS
001S	153T809010	Cushion (A)
002S	153T809020	Cushion (B)
003S	196T801010	Packing Case (PMD221)
003S	195T801010	Packing Case (PMD201)
004S	9013025010	Polyethyrene Bag
005S	196T803010	Partitioner
001T	196T851210	User Manual
002T	196T851220	User Manual, Spec Flysheet (PMD221)
002T	195T851220	User Manual, Spec Flysheet (PMD201)
003T	103H854010	Warranty Card
004T	180T854010	Warranty Card
005T	9526019020	Serial No. Card
006T	2112265010	Serial No. Label
001V	153T156010	Strap
ZA01	AA12005020	A.C. Adaptor

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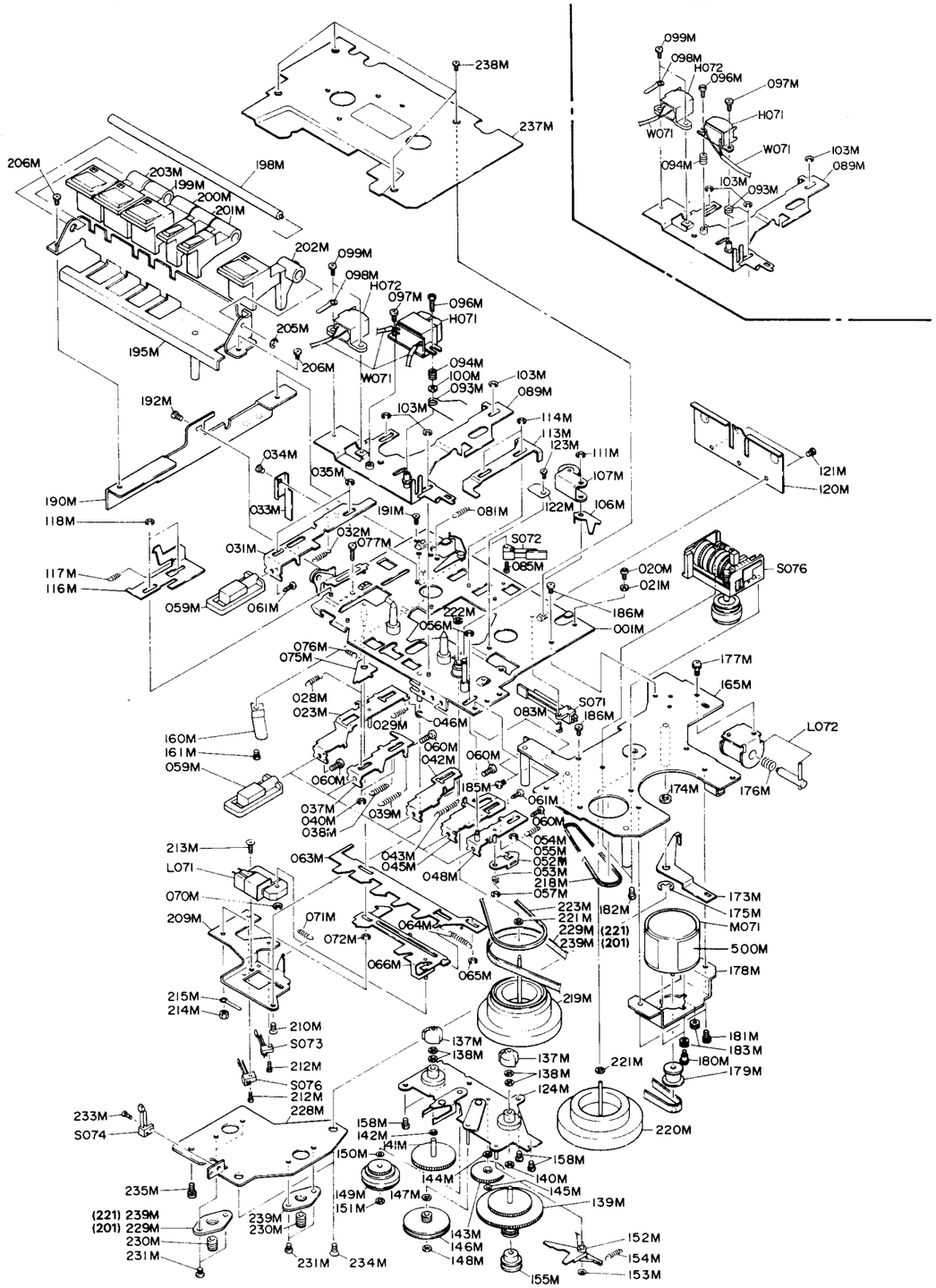
[P01-99] PARTS ASSEMBLED ON THE CHASSIS

PMD201



REF. DESIG.	PART NO.	DESCRIPTION
001M	153T105500	Chassis Ass'y, Main
020M	153T010090	Screw
021M	59020402G0	Washer
023M	153T354500	Lever, Stop Lever Ass'y
028M	251T115100	Spring, S/F Select Cam
029M	153T115170	Spring, Stop Lever
031M	153T354020	Lever, REC
032M	153T115210	Spring, REC Lever
033M	153T125010	Joint, Leaf Spring REC Switch
034M	254T010200	Screw
035M	64001500L0	RG Ring, REC Lever
037M	251T354010	Lever, FWD
038M	251T115220	Spring, Head Base
039M	251T115110	Spring, FWD Lever
040M	64001500L0	RG Ring, FWD Lever
042M	251T354020	Lever, REW
043M	251T115130	Spring, REW Lever
045M	254T354030	Lever, FF
046M	242T115160	Spring, FF Lever
048M	153T354510	Lever Ass'y, Pause
052M	153T002040	Arm, Pause Lock Cam
053M	153T115060	Spring, Pause Lock Cam
054M	153T115140	Spring, Pause Lever
055M	64001500L0	RG Ring, Pause Lever
056M	64000200L0	RG Ring, Pause Lever
057M	64001500L0	RG Ring, Pause Cam
059M	153T354040	Lever, Link Button
060M	51400205P0	B.H. Tapped Screw B2x5
061M	51380205P0	P.H. Tapped Screw P2x5
063M	153T054010	Cam, Lock Plate
064M	153T115160	Spring, Lock Plate
065M	64001500L0	RG Ring, Lock Plate
066M	153T054500	Cam, QMS Lock Plate Ass'y
070M	64001500L0	RG Ring, E
071M	251T115140	Spring, QMS Lock Plate
072M	64000200L0	RG Ring, Lock Plate
075M	251T002100	Arm, REC Inter Lock Plate
076M	251T115150	Spring, REC Inter Lock
077M	153T010120	Screw, Hook Spring
081M	153T115250	Spring, REC Sefety
083M	51841703B0	F.H.M. Screw F1.7x3
085M	153T010140	Screw, F/R Switch
089M	154T105510	Head Base Ass'y
093M	154T115190	Spring, Pinch Roller (PMD221)
093M	153T115190	Spring, Pinch Roller (PMD201)
094M	154T115020	Spring, Azimuth (PMD221)
094M	242T115190	Spring, Azimuth (PMD201)
096M	154T010190	Screw, Azimuth
097M	51060203S0	P.H.M. Screw P2x3
098M	305H005030	Clamper, Head Wires
099M	51100205S0	B.H.M. Screw B2x5
100M	153T012010	Washer, Pinch Roller Spring (PMD221)
103M	64001500L0	RG Ring, Head Base
106M	153T002010	Arm, Pause
107M	153T002590	Arm Ass'y, Pinch Roller
111M	64001500L0	RG Ring, Pinch Arm
113M	242T354160	Lever, Switch & CUE/REV
114M	64001500L0	RG Ring, Switch C/R Lever
116M	254T258010	Hook, Eject Hook Lever
117M	251T115170	Spring, Hook Lever
118M	64001500L0	RG Ring, Hook Lever
120M	153T115010	Spring, Cassette Back
121M	254T010200	Screw, Cassette Back Spring
122M	251T005100	Clamper, Take-Up Idler
123M	254T010200	Screw, Take-Up Idler

REF. DESIG.	PART NO.	DESCRIPTION
124M	153T105550	Chassis Ass'y, Reel
137M	153T256050	Hub, Take-Up & S Reel Cap
138M	59020405G0	Washer, Under Reel Cap
139M	153T058010	Gear, Take-Up Reel Gear Ass'y
140M	59020402G0	Washer, Under Clutch
141M	153T058020	Gear, Supply Reel Gear Ass'y
142M	59020402G0	Washer, Under Supply Reel Ass'y
143M	242T058110	Gear, FF
144M	59020402G0	Washer, Under FF Gear
145M	254T012220	Washer, FF Gear
146M	242T262100	Pulley, FWD Idler
147M	59163202G0	Washer, Under FWD Idler
148M	153T118130	Spacer, FWD Idler
149M	242T262110	Center Pulley Ass'y
150M	153T118120	Spacer, Under C Clutch
151M	153T118130	Spacer, C Pulley Ass'y
152M	242T002100	Arm, Shut OFF
153M	254T012230	Washer, Shut OFF Arm
154M	153T115040	Spring, Shut OFF Arm
155M	153T262020	Pulley, Counter
158M	254T010200	Screw, Reel Chassis Ass'y
160M	153T115020	Spring, Leaf
161M	254T010200	Screw
165M	153T105520	Chassis Ass'y, Sub Fly
173M	153T121010	Link, Auto Stop
174M	59050805G0	Washer, Auto Stop Link
175M	64000400L0	RG Ring, Auto Stop Link
176M	153T115030	Spring, Auto Stop Solenoid
177M	51442604A0	L. Washer Screw L2.6x4
178M	195T160090	Bracket, Motor
179M	195T262240	Pulley, Motor
180M	254T010250	Screw, Motor
181M	51442604A0	L. Washer Screw L2.6x4
182M	51302605B0	P.H. Tapped Screw P2.6x5
183M	254T259200	Bushing, Motor
185M	153T010110	Screw, Sub Fly Chassis
186M	254T010210	Screw, Sub Fly Chassis
190M	153T160040	Bracket, Left Side
191M	254T010210	Screw, L-Side Bracket
192M	153T010110	Screw, L-Side Bracket
195M	153T271500	Button Frame Ass'y
198M	153T112130	Shaft, Button
199M	153T270010	Button, Stop
200M	153T270020	Button, FWD
201M	153T270030	Button, REW & FF
202M	153T270040	Button, Pause
203M	153T270050	Button, REC
205M	64000200L0	RG Ring, Button Shaft
206M	51100203S0	B.H.M. Screw B2x3
209M	153T160010	Bracket, QMS Magnet
210M	51041703S0	F.H.M. Screw F1.7x3
212M	153T010130	Screw
213M	51040208A0	F.H.M. Screw F2x8
214M	53111703A0	Hexagon Nut, QMS Bracket
215M	251T005110	Clamper, Under Nut
218M	153T264020	Belt, Counter
219M	153T273010	Flywheel Ass'y, Main
220M	153T273020	Flywheel Ass'y, Sub
221M	59163202G0	Washer, Under Flywheels
222M	153T118110	Spacer, Oil Fence
223M	242T264120	Belt, Drive
228M	153T160030	Bracket, Fly Back Retainer
229M	153T264010	Belt, Main (PMD221)
229M	153T104010	Retainer (PMD201)
230M	153T164010	Adjuster

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REF. DESIG.	PART NO.	DESCRIPTION
231M	254T010210	Screw
233M	153T010130	Screw, Pause Switch
234M	51042604A0	F.H.M. Screw F2.6x4
235M	51442604A0	L. Washer Screw L2.6x4
237M	153T053010	Cover, Mecha
238M	254T010200	Screw, Mecha Cover
239M	153T104010	Retainer (PMD221)
239M	153T264010	Belt, Main (PMD201)
500M	153T109010	Sield (PMD201)
H071	LH82162030	REC/Play Head (PMD221)
H071	LH41601040	REC/Play Head (PMD201)
H072	LH31000570	Erase Head
L071	ME00140040	Solenoid Coil, QMS Auto REW
L072	ME10180010	Solenoid Coil, Auto Stop
M071	MM00450020	D.C. Motor
S071	SM02010180	Mini Switch, Motor
S072	SM01011140	Mini Switch, F/R
S073	SM01011210	Mini Switch, Play/Stop
S074	SM01011210	Mini Switch, Pause
S076	153T052010	Counter (PMD221)
S076	195T052010	Counter (PMD201)

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ASSIGNMENT OF COMMON PARTS CODES

RESISTOR

*(1) GD05□□□140, Carbon film fixed resistor, ±5%, 1/4W
*(2) GD05□□□160, Carbon film fixed resistor, ±5%, 1/6W
① — Resistance value

Examples
① Resistance value
0.1Ω .... 001 100Ω .... 100 1kΩ 102 100kΩ 104
0.5Ω .... 005 18Ω .... 180 2.7kΩ 272 680kΩ 684
1Ω .... 010 100Ω .... 101 10kΩ 103 1MΩ 105
6.8Ω .... 068 390Ω .... 391 22kΩ 223 2.2MΩ 225

:e) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

* : CERAMIC CAP.
(1) DD1□□□□370, Ceramic condenser
Disc type
① ② Temp. coeff. P350 ~ N1000, 50V
② Capacity value
① Tolerance

Examples
① Tolerance (Capacity deviation)
±0.25pF ... 0
±0.5pF ... 1
±5% 5

olerance of COMMON PARTS handled here are as follows:
0.5pF ~ 5pF ... ±0.25pF
6pF ~ 10pF ... ±0.5pF
12pF ~ 560pF ... ±5%

② Capacity value
0.5pF ... 005 3pF ... 030 100pF ... 101
1pF ... 010 10pF ... 100 220pF ... 221
1.5pF ... 015 47pF ... 470 560pF ... 561

* : CERAMIC CAP.
(1) DK16□□□300, High dielectric constant ceramic condenser
① Disc type
Temp. chara. 2B4, 50V
Capacity value

Examples
① Capacity value
100pF ... 101 1000pF ... 102 10000pF ... 103
470pF ... 471 2200pF ... 222

* : ELECTROLY CAP. (⊕), FILM CAP. (∓)

(1) EA□□□□□□10, Electrolytic condenser
① ② One-way lead type, Tolerance ±20%
② Dielectric strength
① Capacity value

Examples
① Capacity value
0.1μF ... 104 4.7μF ... 475 100μF ... 107
0.33μF ... 334 10μF ... 106 330μF ... 337
1μF ... 105 22μF ... 226 1000μF ... 108
2200μF ... 228

② Working voltage
6.3V ... 006 25V ... 025
10V ... 010 35V ... 035
16V ... 016 50V ... 050

(2) DF15□□□350, Plastic film condenser
① One-way type, Mylar ±5% 50V
Capacity value

Examples
① Capacity value
0.001μF (1000pF) ... 102 0.015μF ... 153
0.0018μF ..... 182 0.1μF ... 104
0.01μF ..... 103 0.56μF ... 564
1μF ... 105

8. ELECTRICAL PARTS LIST

REF. DESIG.	PART NO.	DESCRIPTION
		PJ00-REC/PLAY AMP CIRCUIT BOARD
PJ00	YK195T1510	P.W. Board R/P Amp
	ZZ196T1510	P.W. Board Assembly (PMD221)
	ZZ195T1510	P.W. Board Assembly (PMD201)
		PJ00-CAPACITORS
C705	DD15101300	Ceramic 100 pF ±5% (PMD201)
CG02	DF16474530	Film 0.47 μF ±10%
CL07	DF15123550	Film 0.012 μF ±5%
CJ41	DD15151300	Ceramic 150 pF ±5%
		PJ00-RESISTORS
R702	RK01030520	10kΩ (A) Variable
R707	RM01030270	10kΩ (W) Variable
RE14	RK02030670	20kΩ (B) Variable
RG06	GG05471120	470Ω ±5% 1/2W
RJ16	RA02230600	22kΩ (B) Trimming
RK01	RA02230600	22kΩ (B) Trimming
RL12	RA01040600	100kΩ (B) Trimming
RM14	RK05010060	500Ω (B) Variable
RM15	RA01020600	1kΩ (B) Trimming
RX01	RA01040600	100kΩ (B) Trimming
RY32	RA02230600	22kΩ (B) Trimming
		PJ00-SEMICONDUCTORS
DE01	HD20015210	Diode 1SS133
DE02	HD20015210	Diode 1SS133
DE03	HD20015210	Diode 1SS133
DG01	HD30021060	Zener RD5.IE-B2
DG02	HD30021060	Zener RD5.IE-B2
DK01	HD20015210	Diode 1SS133
DK02	HD20015210	Diode 1SS133
DK03	HD20015210	Diode 1SS133
DL01	HD20015210	Diode 1SS133
DL05	HD20015210	Diode 1SS133
DL06	HD30002020	Zener 3.9V
DL07	HD20015210	Diode 1SS133
DM09	HD30042060	Zener RD 7.5EB3
DX01	HD20015210	Diode 1SS133
Q701	HC10055210	IC BA527
QE01	HT327841U0	Transistor 2SC2784 U
QE02	HT327841U0	Transistor 2SC2784 U
QE03	HT327841U0	Transistor 2SC2784 U
QE04	HT327841U0	Transistor 2SC2784 U
QE05	HT327841U0	Transistor 2SC2784 U
QG01	HT333122B0	Transistor 2SC3312 S.T
QJ01	HT327841U0	Transistor 2SC2784 U
QJ02	HT327841U0	Transistor 2SC2784 U
QJ03	HT333122B0	Transistor 2SC3312 S.T
QJ04	HT333122B0	Transistor 2SC3312 S.T
QJ31	HT333122B0	Transistor 2SC3312 S.T
QK01	HC10017090	IC 4558 DD
QK02	HT333122B0	Transistor 2SC3312 S.T
QK03	HT333122B0	Transistor 2SC3312 S.T
QK04	HT333122B0	Transistor 2SC3312 S.T

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REF. DESIG.	PART NO.	DESCRIPTION
QK31	HT333122B0	Transistor 2SC3312 S.T
QK32	HT333122B0	Transistor 2SC3312 S.T
QK33	HT333122B0	Transistor 2SC3312 S.T
QL01	HT404711L0	Transistor 2SD471 L
QL02	HT404711L0	Transistor 2SD471 L
QL03	HT404711L0	Transistor 2SD471 L
QL04	HT333122B0	Transistor 2SC3312 S.T
QL05	HT113092B0	Transistor 2SA1309 S.T
QL06	HT113092B0	Transistor 2SA1309 S.T
QL07	HT113092B0	Transistor 2SA1309 S.T
QL31	HT333122B0	Transistor 2SC3312 S.T
QM09	HT333122B0	Transistor 2SC3312 R or S
QM10	HT333122B0	Transistor 2SC3312 R or S
QM11	HT30002000	Transistor 2SC2784, 2SC3312 etc.
QN01	HC10017090	IC 4558 DD (PMD221)
QN02	HT30002000	Transistor 2SC2784, 2SC3312 etc. (PMD221)
QX01	HT333122B0	Transistor 2SC3312 S.T
QX02	HT333122B0	Transistor 2SC3312 S.T
QY01	HT333122B0	Transistor 2SC3312 S.T
QY02	HT30002000	Transistor 2SC2784, 2SC3312 etc.
QY03	HT30002000	Transistor 2SC2784, 2SC3312 etc.
		PJ00-MISCELLANEOUS
J701	YJ01002090	Jack Headphone
J702	YJ01002160	Jack Ext SP
JE01	YJ01002160	Jack Tel Pick up
JE02	YJ01002160	Jack Mic
JE03	YJ04080260	Jumper Lead
JE04	YU05080260	Jumper Lead
JG01	YT02020280	Terminal Pin Jack 2P
JG02	YJ01002430	Jack Direct Tel
JL01	YJ06003110	Jack Connector
JL02	YJ04000840	Jack DC IN
JM02	YJ01002440	Jack Remote
JY01	YJ06003250	Jack Connector
LJ41	LC22260700	Choke Coil 22mH
LK01	LC25650700	Choke Coil 5.6mH
LK02	LC24760520	Choke Coil Bias Trap 85kHz
LL01	TC10150070	Osc Transf. Bias Osc Coil
LL02	LC14730040	Choke Coil 47μH
LL05	TC10200090	Osc Transf. DC-DC Converter
LL06	LC14730040	Choke Coil 47μH
LL07	LC21050700	Choke Coil 1mH
S701	SS02020740	Slide Switch Speaker ON/OFF
SG01	SP02020730	Push Switch Tape/Source Select (PMD221)
SJ01	SS06020570	Slide Switch Rec/Play
SK01	SR02030130	Rotary Switch Rec Mode
SK02	SS02030230	Slide Switch Tape Select
TG01	T012414010	Output Transf. Direct

REF. DESIG.	PART NO.	DESCRIPTION
		PL00-LED CIRCUIT BOARD
PL00	YK195T1540	P.W. Board LED
	ZZ195T1540	P.W. Board Assembly
		PL00-MISCELLANEOUS
DY08	HI10056020	LED Rec Ind.
DY28	HI10025020	LED Batt Ind.
		PM00-MECHA CONTROL CIRCUIT BOARD
PM00	WC195T0210	P.W. Board Mecha Control
	ZZ196T0210	P.W. Board Assembly (PMD221)
	ZZ195T0210	P.W. Board Assembly (PMD201)
		PM00-CAPACITOR
CM09	DK46102300	Ceramic 1000pF ±10% Chip
		PM00-RESISTORS
		(All Resistors are ±5% & 1/8W)
JM03	RI05000180	Resistor 0Ω 1/8W Chip
JM04	RI05000180	Resistor 0Ω 1/8W Chip
RM01	NB50052390	0.5Ω 1/2W
RM02	RI05022180	2.2Ω Chip
RM03	NB51032200	10kΩ 1/2W
RM04	RA03320600	3.3kΩ (B) Trimming
RM05	RI05473180	47kΩ Chip
RM06	RI05473180	47kΩ Chip (PMD221)
RM06	RI05000180	0Ω Chip (PMD201)
RM07	RI05473180	47kΩ Chip
RM08	RI05472180	4.7kΩ Chip
RM09	RI05681180	680Ω Chip
RM10	RI05472180	4.7kΩ
RM11	RI05473180	47kΩ
RM12	RI05681180	680Ω
RM13	GA05047010	4.7Ω 1W
		PM00-SEMICONDUCTORS
DM01	HZ20001020	Diode Chip
DM02	HZ20016210	Diode 1SR35-200
DM03	HZ20001020	Diode Chip
DM04	HZ20001020	Diode Chip
DM05	HZ20001020	Diode Chip
DM06	HZ20001020	Diode Chip
DM07	HZ20001020	Diode Chip
DM08	HZ30003020	Zener MA30
QM01	HC10037020	IC AN6612
QM02	HT108811Q0	Transistor 2SA881
QM03	HX413262A0	Transistor 2SD1328 R.S Chip
QM04	BA20002210	Semicon. Comp DTC-124E K
QM05	HX413282A0	Transistor 2SD1328 R.S Chip
QM06	BA20002210	Semicon. Comp DTC-124E K
QM07	HC10024020	IC DN6864
QM08	HC10039210	IC BA668
		PM00-MISCELLANEOUS
JM01	YB00080120	Connective Cord
		PM01-MEMORY SWITCH CIRCUIT BOARD (PMD221, ONLY)
PM01	WC195T0220	P.W. Board Memory SW
	ZZ196T0220	P.W. Board Assembly
SM01	SP02020840	Push Switch Memory Rew

REF. DESIG.	PART NO.	DESCRIPTION
		PS00-INPUT SELECT CIRCUIT BOARD
PS00	YK195T1520	P.W. Board Switch Input
	ZZ195T1520	P.W. Board Assembly
		PS00-MISCELLANEOUS
SS01	SS02030290	Slide Switch Input Select
SS02	SS02030290	Slide Switch Anc Select
SS03	SS02030290	Slide Switch Mic Att.
		PS01-TAPE SPEED SELECT CIRCUIT BOARD
PS01	YK195T1530	P.W. Board Speed Switch
	ZZ195T1530	P.W. Board Assembly
SS04	SS02020760	Slide Switch Tape Speed

(W01-99)	Assembly and Wiring
(T01-99)	Adjustment
(X01-00)	Correction

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9. TECHNICAL SPECIFICATIONS

Model PMD221

Tape Drive System ..... Single Capstan Drive
Cartridge ..... Philips type compact cassette
Track System 2-track 1-channel
Tape Speed ..... 1-7/8 ips and 15/16 ips
Heads ..... 3 Head System
Record: Super Hard Metal Alloy
Playback: Super Hard Metal Alloy
Erase: Dual Gap Metal Alloy
Motor ..... DC Servo Motor

Frequency Response:

	Standard Speed 1-7/8 ips (±3 dB)	Long Play 15/16 ips (±3 dB)
Normal Tape	40 Hz ~ 12.5 kHz	40 Hz ~ 6.5 kHz
CrO_2 Tape	40 Hz ~ 14 kHz	40 Hz ~ 7.5 kHz
Metal Tape	40 Hz ~ 15 kHz	40 Hz ~ 8.5 kHz

Signal to Noise Ratio:
Normal Tape ..... 55 dB
CrO_2 Tape ..... 57 dB
Metal Tape ..... 57 dB

Wow and Flutter (WRMS)
Standard Speed 1-7/8 ips 0.12%
Long Play 15/16 ips 0.15%

Output Level/Impedance
Line ..... 650 mV/2 k ohms
Headphone ..... 280 mV/8 ohms

Input Sensitivity/Impedance
Line ..... 40 mV/56 kohms
Microphone ..... 0.3 mV/9 k ohms

General:
Power Requirements ..... 120 V, 50/60 Hz
Battery Requirements (RB430 Battery Pack Optional) ..... 3 D Cells or RB430 Rechargeable Battery Pack
Battery Life
With Alkaline Batteries
Playback Time ..... 7.5 Hours
Recording Time with Metal Tape ..... 5.5 Hours
With RB430 Battery Pack (optional)
Playback Time ..... 4.5 Hours
Recording Time with Metal Tape ..... 4.0 Hours
Unit Dimensions and Weight
Width ..... 228 mm (9")
Heigth ..... 51 mm (2")
Depth ..... 165 mm (6.5")
Weight ..... 1.3 kg (2.87 lbs.)

Model PMD201

Tape Drive System ..... Single Capstan Drive
Cartridge ..... Philips type compact cassette
Track System 2-track 1-channel
Tape Speed ..... 1-7/8 ips and 15/16 ips
Heads ..... 2 Head System
Record/Playback: Super Hard Metal Alloy
Erase: Dual Gap Metal Alloy
Motor ..... DC Servo Motor

Frequency Response:

	Standard Speed 1-7/8 ips (±3 dB)	Long Play 15/16 ips (±3 dB)
Normal Tape	40 Hz ~ 12 kHz	40 Hz ~ 6 kHz
CrO_2 Tape	40 Hz ~ 13.5 kHz	40 Hz ~ 7 kHz
Metal Tape	40 Hz ~ 14 kHz	40 Hz ~ 8 kHz

Signal to Noise Ratio:
Normal Tape ..... 55 dB
CrO_2 Tape ..... 57 dB
Metal Tape ..... 57 dB

Wow and Flutter (WRMS)
Standard Speed 1-7/8 ips 0.12%
Long Play 15/16 ips 0.15%

Output Level/Impedance
Line ..... 650 mV/2 k ohms
Headphone ..... 280 mV/8 ohms

Input Sensitivity/Impedance
Line ..... 40 mV/56 kohms
Microphone ..... 0.3 mV/9 k ohms

General:
Power Requirements ..... 120 V, 50/60 Hz
Battery Requirements (RB430 Battery Pack Optional) ..... 3 D Cells or RB430 Rechargeable Battery Pack
Battery Life
With Alkaline Batteries
Playback Time ..... 7.5 Hours
Recording Time with Metal Tape ..... 5.5 Hours
With RB430 Battery Pack (optional)
Playback Time ..... 4.5 Hours
Recording Time with Metal Tape ..... 4.0 Hours
Unit Dimensions and Weight
Width ..... 228 mm (9")
Heigth ..... 51 mm (2")
Depth ..... 165 mm (6.5")
Weight ..... 1.3 kg (2.87 lbs.)

M3088

Q701 HC1005521O BA527	QE01～QE05 QJ01,QJ02 HT32784IU0 2SC2784(U)	QG01,QJ03,QJ04,QK02～QK04 QK31～QK33,QL04,QL31,QM09,QM10 QX01,QX02,QY01 HT333122B0 2SC3312(R,S)	QK01 HC10017090 NJM2043DD	QL01～QL03 HT40471IL0 2SD471(L)	QL05～QL07 HT113092B0 2SA1309 (S,T)	QM01 HC10037020 AN6612	QM02 HT10881IQ0 2SA881(Q)	QM03,QM05 HX413282A0 2SD1328 (R,S)	QM04,QM06 BA20002210 DTC-124E	QM07 HC10024020 DN6838	QM08 HC10039210 BA337	QY02,QY03 HT30002000	DE01～DE03 DK01～DK03 DL01,DL05,DL07, HD20015210 1SS133

PJ00

PS00

PM00

R/P HEAD

H072

H071
EARTH HEAD

E.C.M

DIRECT TELEPHONE JACK

REMORT JACK

LINE

MIC/TEL

DIRECT TEL

NORMAL

TEL.

EXT MIC

VOLTAGE

( ) = CrO2

( ) = METAL

= LOW SPEED

NOR CrO2 ME

PSO1

SS04

2.4cm ⟷ 4.8cm

MO71

NORMAL

CrO2

METAL

LK02
TRAP

LL01

LLO2

L072
AUTO STOP

L071
FF/REW

S073-1
STOP

S074
PAUSE

S072
FF/REW

S073-2
PLAY
SW

S071
POWER
SW

LL01
RL12
RE14
RJ16
RK01
RX01
RY32
R702
R707
SJ01
SK01
SK02
S701
TG01
SS01
SS02
SS03
SS04

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Kind of Common Parts

RESISTOR

R*** (1) GD05 - - - 140, Carbon film fixed resistor, ±5% 1/4W

R*** (2) GD05 - - - 160, Carbon film fixed resistor, ±5% 1/6W

C*** : **CERAMIC CAP.**

(1) DD1 - - - - 370, Ceramic condenser, disc type (titan condenser) Temp. coeff. P350 ~ N1000 50V

C*** : **CERAMIC CAP.**

(1) DK16 - - - 300, High dielectric constant ceramic condenser, disc type (titan variable) Temp. chara. 2B4 50V

C*** **ELECTROLY CAP. (⧺) / FILM CAP. (⥤)**

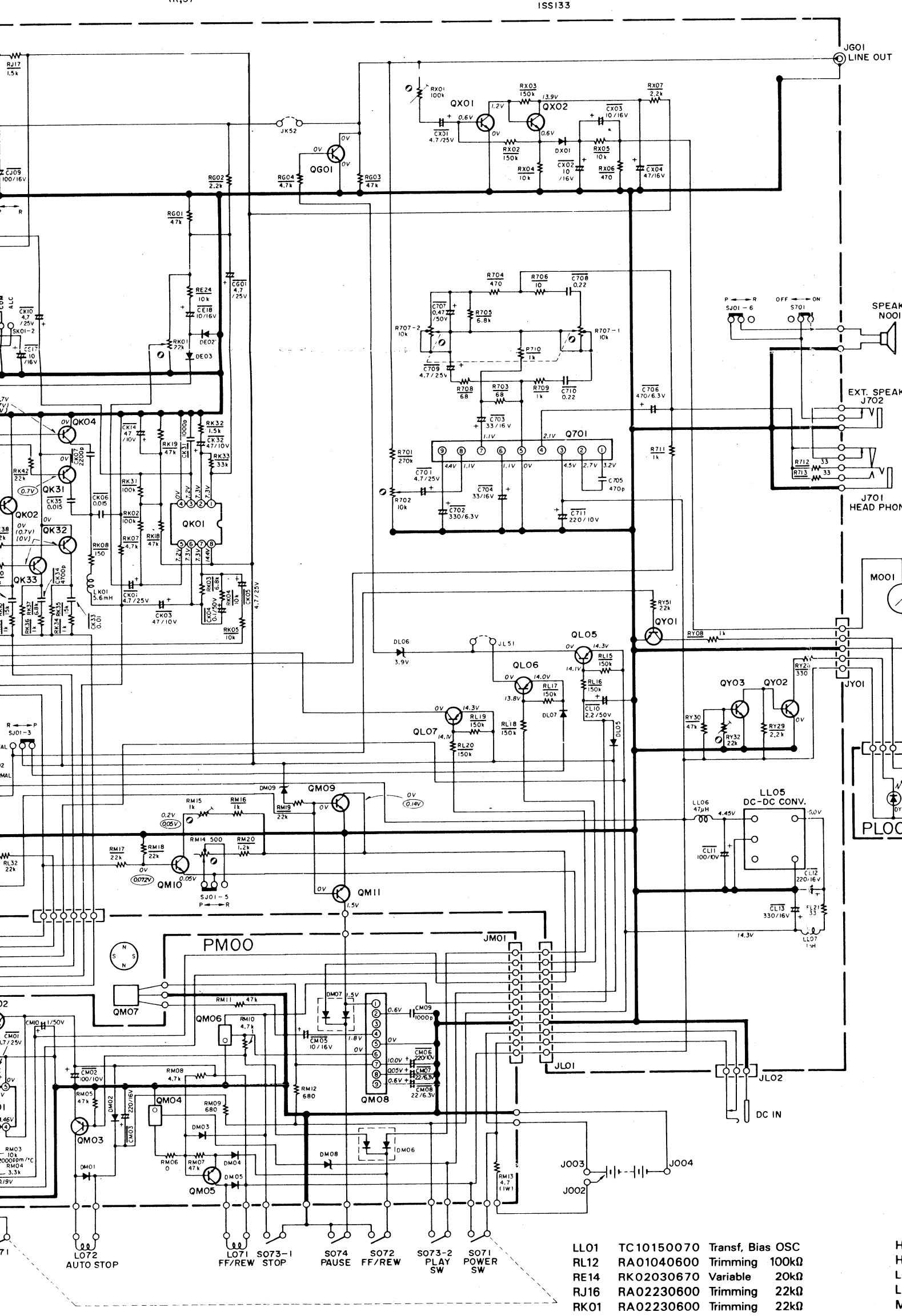
(1) EA - - - - - - 10, Electrolytic condenser, one-way lead type, tolerance ±20%

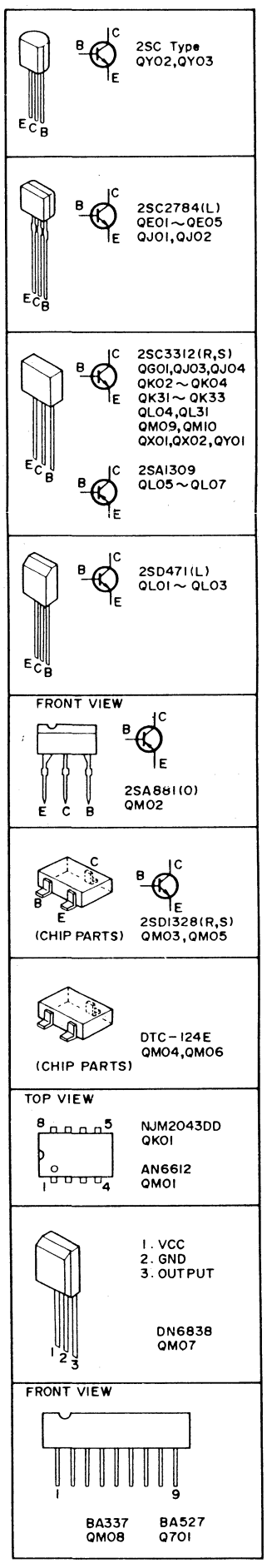
(2) DF15 - - - 350, Plastic film condenser, one-way type, Mylar, ±5% 50V

* In case of ordering the common parts, please establish the correct parts number of 10 figures by the procedure "ASSIGNMENT OF COMMON PARTS CODES"

Model PMD201

	QM02	QM03,QM05	QM04,QM06	QM07	QM08	QY02,QY03	DE01 ~ DE03 DK01 ~ DK03 DL01,DL05,DL07,DX01 HD20015210 1SS133	DL06	DM01	DM02	DY08	DY28
037020 612	HT10881Q0 2SA881(Q)	HX413282A0 2SD1328 (R,S)	BA20002210 DTC-124E	HC10024020 DN6838	HC10039210 BA337	HT30002000		HD30002020 ZENER 3.9V	DM03 ~ DM07 HZ20001020	HD20016210 1SR35	HT10056020	HT10025020





LY CAP. (⧺) / FILM CAP. (⥤)

10, Electrolytic condenser,
one-way lead type, tolerance ±20%

350, Plastic film condenser,
one-way type, Mylar, ±5% 50V

the common parts, please establish the correct figures by the procedure "ASSIGNMENT OF ODES"

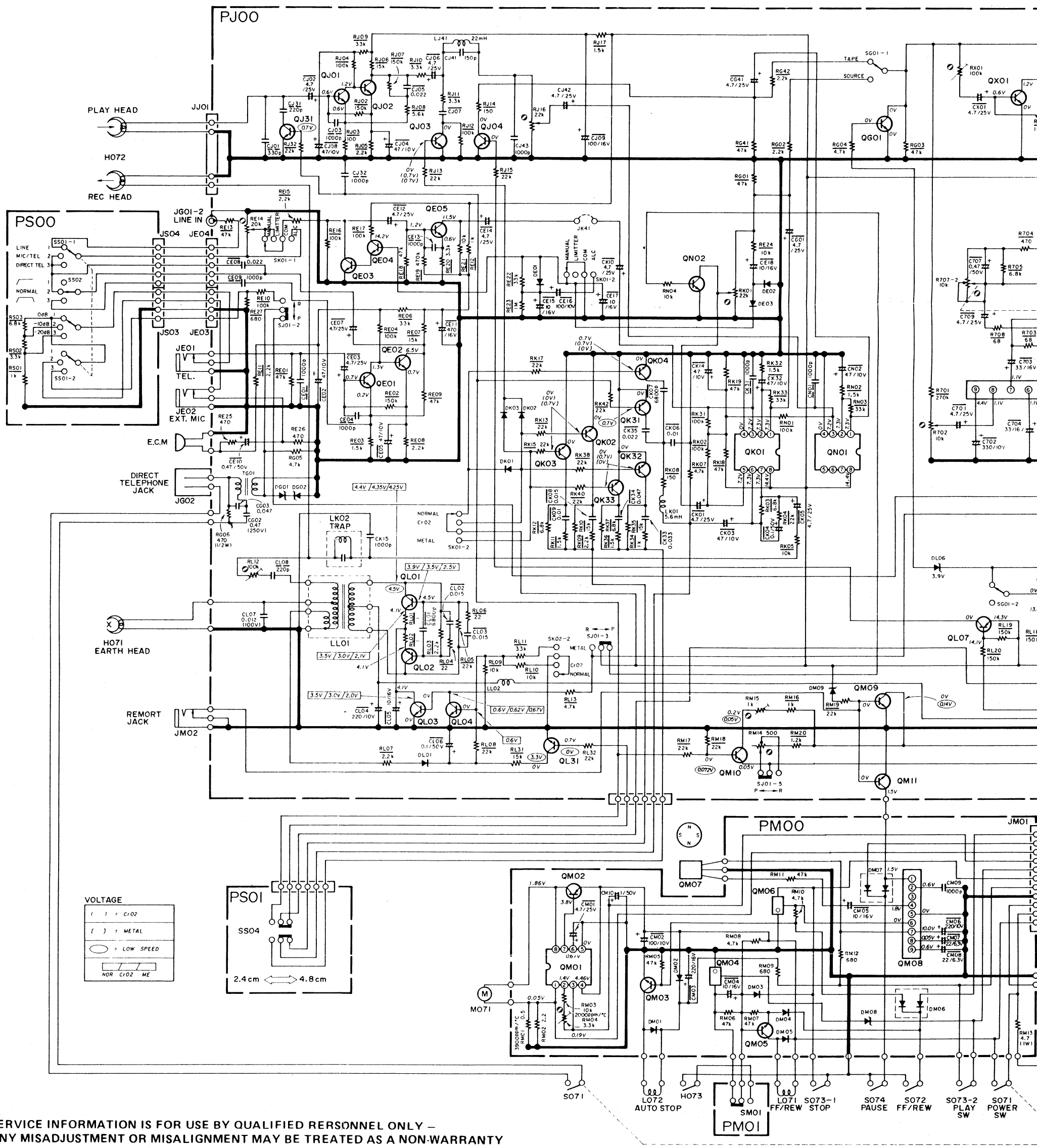
LL01	TC10150070	Transf, Bias OSC	
RL12	RA01040600	Trimming	100kΩ
RE14	RK02030670	Variable	20kΩ
RJ16	RA02230600	Trimming	22kΩ
RK01	RA02230600	Trimming	22kΩ
RX01	RA01040600	Trimming	100kΩ
RY32	RA02230600	Trimming	22kΩ
R702	RK01030520	Variable	10kΩ
R707	RM01030270	Variable	10kΩ
SJ01	SS06020570	Slide Switch, Rec/Play	
SK01	SR02030130	Rotary Switch, Rec Mode	
SK02	SS02030230	Slide Switch, Tape Selector	
S701	SS02020740	Slide Switch, Speaker ON/OFF	
TG01	T012414010	Output Transf.	
SS01	SS02030290	Slide Switch, Input Selector	
SS02	SS02030290	Slide Switch, ANC Selector	
SS03	SS02030290	Slide Switch, MIC ATT.	
SS04	SS02020760	Slide Switch, Tape Speed	

H071	LH41601040	Head Rec/Play	
H072	LH31000570	Head Erase	
L071	ME00140040	Solenoid Coil, QMS Auto Rew	
L072	ME10180010	Solenoid Coil, Auto Stop	
M071	MM00450020	D.C. Motor	
M001	IM31040030	V.U. Meter	
N001	QJ72478010	Speaker	4Ω
N002	MS50000150	MIC Unit	
S071	SM02010180	Mini Switch, Motor	
S072	SM01011140	Mini Switch, F/R	
S073	SM01011210	Mini Switch, Play	
S074	SM01011210	Mini Switch, Pause	
S076	195T052010	Counter	
107M	153T002590	Arm Ass'y Roller, Pinch	
218M	153T264020	Belt Counter	
219M	153T273010	Main Flywheel	
220M	153T273020	Sub Flywheel	
223M	242T264120	Belt Drive	
239M	153T264010	Main Belt	

Components and wiring are subject to change for modification without notice.

10. SCHEMATIC DIAGRAM

Q701 HC10055210 BA527	QE01～QE05 QJ01,QJ02 HT32784IU0 2SC2784(U)	QG01,QJ03,QJ04,QK02～QK04 QK31～QK33,QL04,QL31,QM09,QM10 QX01,QX02,QY01 HT333122B0 2SC3312(R,S)	QK01,QN01 HC10017090 NJM2043DD	QL01～QL03 HT40471IL0 2SD471(L)	QL05～QL07 HTII3092B0 2SA1309 (S,T)	QM01 HC10037020 AN6612	QM02 HT10881IQ0 2SA881(Q)	QM03,QM05 HX413282A0 2SD1328 (R,S)	QM04,QM06 BA20002210 DTC-124E	QM07 HC10024020 DN6838	QM08 HC10039210 BA337	QY02,QYC HT30002 ZENER 3.9



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REPAIR BY ANY MARANTZ SERVICE CENTRE – "

Kind of Common Parts

RESISTOR

R*** (1) GD05 - - - 140, Carbon film fixed resistor, ±5% 1/4W
R*** (2) GD05 - - - 160, Carbon film fixed resistor, ±5% 1/6W

C*** : **CERAMIC CAP.**
(1) DD1 - - - - 370, Ceramic condenser,
disc type (titan condenser)
Temp. coeff. P350 ~ N1000 50V

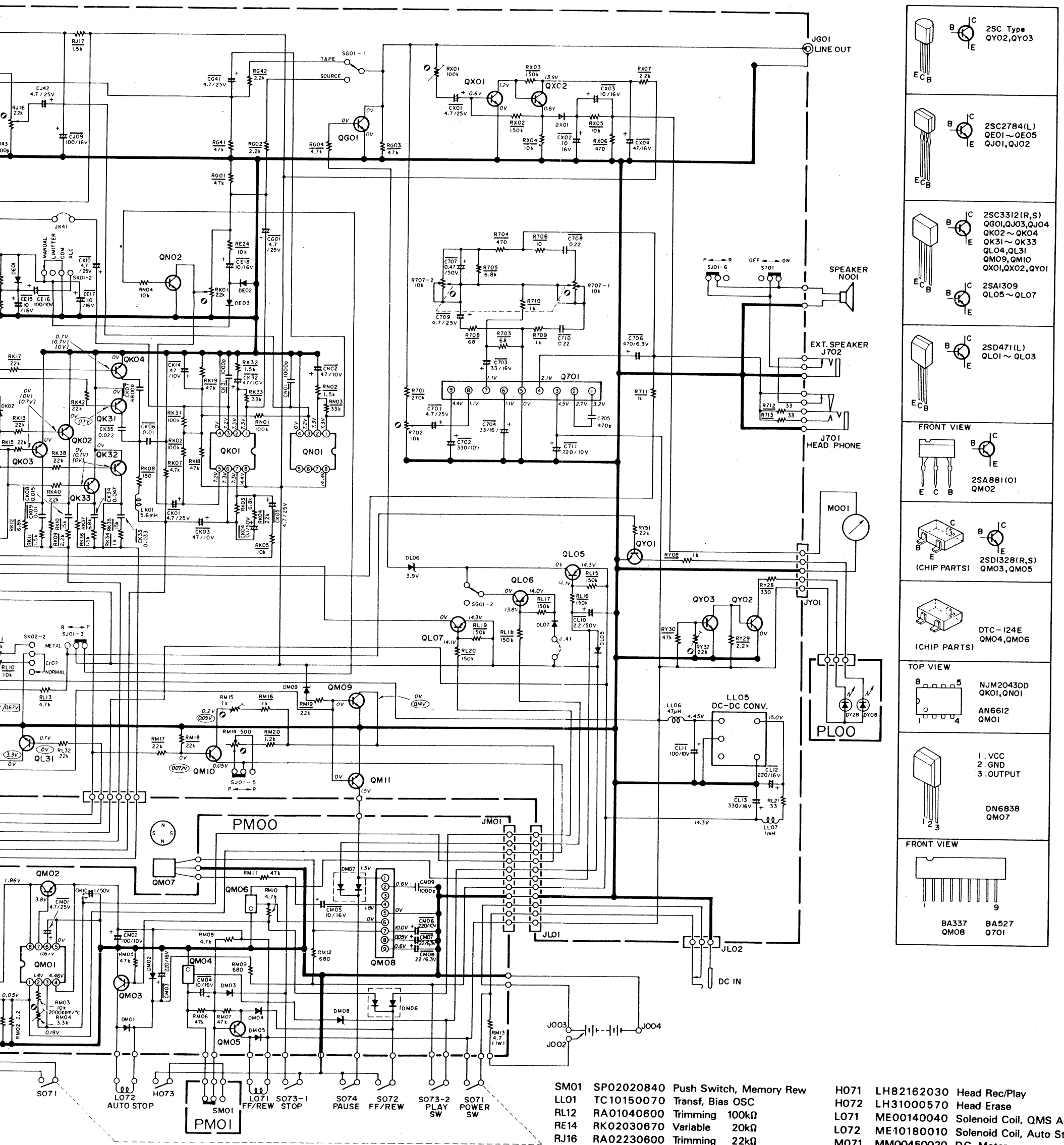
C*** : **CERAMIC CAP.**
(1) DK16 - - - 300, High dielectric constant ceramic condenser,
disc type (titan variable)
Temp. chara. 2B4 50V

C*** : **ELECTROLY CAP. (⧺) / FILM CAP. (⥤)**
(1) EA - - - - - - 10, Electrolytic condenser,
one-way lead type, tolerance ±20%
(2) DF15 - - - 350, Plastic film condenser,
one-way type, Mylar, ±5% 50V

* In case of ordering the common parts, please establish the correct parts number of 10 figures by the procedure "ASSIGNMENT OF COMMON PARTS CODES"

Model PMD221

~QL07 09280 309 S,T)	QM01 HC10037020 AN6612	QM02 HT10881IQ0 2SA881(Q)	QM03,QM05 HX413282A0 2SD1328 (R,S)	QM04,QM06 BA20002210 DTC-124E	QM07 HC10024020 DN6838	QM08 HC10039210 BA337	QY02,QY03 HT30002000 ZENER 3.9V	DE01~DE03 DK01~DK03 DL01,DL05,DL07,DX01 HD20015210 1SS133	DL06 HD30002020	DM01 DM03~DM07 HZ20001020	DM02 HD20016210 1SR35	DY08 HI10056020	DY28 HI10025020



LY CAP. (⫩) / FILM CAP. (⫨)

10, Electrolytic condenser,
one-way lead type, tolerance ±20%

350, Plastic film condenser,
one-way type, Mylar, ±5% 50V

the common parts, please establish the correct figures by the procedure "ASSIGNMENT OF ODES"

SM01	SP02020840	Push Switch, Memory Rew	H071	LH82162030	Head Rec/Play
LL01	TC10150070	Transf, Bias OSC	H072	LH31000570	Head Erase
RL12	RA01040600	Trimming 100kΩ	L071	ME00140040	Solenoid Coil, QMS Auto Rew
RE14	RK02030670	Variable 20kΩ	L072	ME10180010	Solenoid Coil, Auto Stop
RJ16	RA02230600	Trimming 22kΩ	M071	MM00450020	D.C. Motor
RK01	RA02230600	Trimming 22kΩ	M001	IM31040030	V.U. Meter
RX01	RA01040600	Trimming 100kΩ	N001	QJ72478010	Speaker 4Ω
RY32	RA02230600	Trimming 22KΩ	N002	MS50000150	MIC Unit
R702	RK01030520	Variable 10kΩ	S071	SM02010180	Mini Switch, Motor
R707	RM01030270	Variable 10kΩ	S072	SM01011140	Mini Switch, F/R
SG01	SP02020730	Push Switch, Tape/Source	S073	SM01011210	Mini Switch, Play
SJ01	SS06020570	Slide Switch, Rec/Play	S074	SM01011210	Mini Switch, Pause
SK01	SR02030130	Rotary Switch, Rec Mode	S076	153T052010	Counter
SK02	SS02030230	Slide Switch, Tape Selector			
S701	SS02020740	Slid Switch, Speaker ON/OFF	218M	153T264020	Belt Counter
TG01	T012414010	Output Transf.	223M	242T264120	Belt Drive
SS01	SS02030290	Slide Switch, Input Selector	229M	153T264010	Main Belt
SS02	SS02030290	Slide Switch, ANC Selecor	107M	153T002590	Arm Ass'y Roller, Pinch
SS03	SS02030290	Slide Switch, MIC ATT.	219M	153T273010	Main Flywheel
SS04	SS02020760	Slide Switch, Tape Speed.	220M	153T273020	Sub Flywheel

Components and wiring are subject to change for modification without notice.

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